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WORK FOR MARCH, NORTH AND WEST.

Maple Sugar.—Maple sugar should now be made by all who have trees suitable for it. No tree should be tapped before it is from 50 to 60 years of age, say 12 to 15 inches in diameter; and even then, if the annual drawing of the sap is too profuse, the trees will become sickly and die from premature decay. The amount of sugar obtained from each tree varies from different causes. A cold and dry winter renders them more productive than a changeable and humid one. Let it be remembered that when a frosty night is followed by a dry and sunny day, the sap flows abundantly; and that in cold, frosty weather, or in rainy weather, or when the nights are mild, with little or no frost, it almost ceases to run. Trees which grow in low, moist places afford a greater quantity of sap, but less sugar, than those which occupy rising grounds. The sap, also, from isolated trees, left standing in the middle of pastures or fields, or by the sides of fences, is regarded as best, and will produce more sugar than that from trees growing in a forest.

For directions for tapping the trees and making the sugar, see p. 89, of our third volume.

Fences.—These should undergo a thorough examination and repair, new ones built, and all superfluous ones torn away, as soon as the frost is out of the ground.

Meadows and Old Fields.—If you have any meadows or old fields that are sward-bound, or which bore but indifferent crops of hay last season, give them a thorough harrowing as soon as the frost is out of the surface, while the ground is soft; then sow to each acre 4 quarts of Timothy seed, 10 lbs. of clover seed, 1 bushel of plaster of Paris, 5 bushels of wood ashes, and 5 bushels of newly-slacked lime, all well mixed, and finish off by rolling.

Winter Wheat and Rye.—If your fields of winter wheat or rye are much killed by frost, let each acre be sown with 15 lbs. of clover seed, 1 bushel of plaster, and 10 bushels of newly-slacked lime, well incorporated together; then pass over the field a light harrow, and lastly the roller. Most of the grain roots that will be torn up by the harrow the roller will restore to the earth, where they will not only grow again, but each joint, which may thus be pressed into the soil, will form new roots, send forth additional stalks, and contribute to an increased yield.

Allotment, or Classification of Spring Crops.—This is the season when all plans should be matured, and all arrangements completed for putting in spring crops. In the first place, do not attempt to cultivate more land than you can properly attend to, let it be ever so rich, nor to sow, or plant, more than you can well manure; for, a few acres, judiciously tilled, will yield a more profitable return, and at the end of the season will be in a better condition for the succeeding crop. Particular regard, also, should be paid to *rotation*; for, as a general rule, seeding the same ground for the same kind of crop, two years in succession, tends to the impoverishment of the soil. For reliable directions on this subject, see p. 76, of the present number.

Spring Grain, &c.—As soon as the frost is out of the ground and the soil is sufficiently dry, the lands intended for oats, barley, spring wheat, and rye should be well and deeply plowed, manured, thoroughly pulverized by the harrow and roller, and then sown. Any kind of grass seed, adapted to spring culture, may be sown with barley or wheat, but not with oats nor rye.

Manures.—Lose no opportunity in hauling out manure, in order that there may be no hindrances in spreading and plowing it in, previous to planting, or sowing your seeds. Should it be necessary for it to lie in heaps in the field, or to be spread on the surface long before it is plowed in, it would be preferable if a little plaster were scattered over it, in order to fix the ammonia and prevent its escape. Neither lime nor wood ashes should be applied with guano nor with any other animal manures, as they both will liberate the ammonia contained in them, and cause it to be lost; but the lime and ashes should always be mixed together, as the former will disengage the potash from the latter, which will then be more prompt and energetic in its effects. Quick lime, caustic lime, or *hot lime*, as it is sometimes called, should never be applied directly to composts, manures, nor to the soil, except in cases where organic acids and much crude vegetable matter abound. Lime is best applied in composts having for their basis a large proportion of vegetable matter, as peat, or swamp muck, turf, rotten wood, decayed leaves, straw, &c. It should first be thoroughly slacked, and directly after incorporated in the compost.

Guano should not be applied at this season, except as a steep for promoting the vegetation of seeds.

Care and Management of Stock.—All working, breeding, and store animals should still be carefully attended to, sheltered regularly, fed, salted, watered, &c., whenever required. Particular attention should be paid to milch cows, as well as those with young.

See that they have, daily, a proper allowance of hay, and some kind of succulent food, such as beets, carrots, parsnips, cabbages, mashies of bran or Indian meal, or browse from the woods when it can be safely and conveniently obtained. Should you have any cow you wish to bring into milk in December next, it will be necessary now to induce her to take the bull; and, for this purpose, medicines of a stimulant nature may sometimes be advantageously used. These will seldom be necessary, however, if the animal is well fed, though there are some constitutions so sluggish and torpid as to require artificial aid. Among the provocative medicines employed for this purpose, the following has been adopted with success:—

Grains of Paradise, (cardamoms,) $\frac{1}{2}$ oz.; cantharides, (Spanish flies,) from $\frac{1}{4}$ to $\frac{1}{2}$ oz.

To be boiled in two or three pints of strong beer or ale, and given, milk warm, to the animal, while fasting, not allowing her anything to eat nor drink for four hours after taking it, in order that it may have the more influence. If she takes the bull within the period of four or five days after, it will be unnecessary to repeat the dose.

To those who have but a small number of cows, where a bull is not always kept with them it will be useful to know when they are inclined for coition. This may be known by a general restlessness; a shifting about from place to place; the tail in constant motion; a frequent dunging, staling, and bellowing; a loss of appetite; suddenly abating her milk; and when in the yard or field, frequently riding oxen or other cows, or allowing them to ride her. In old cows, symptoms are known to continue four or five days; but, in general, not more than twenty-four hours,—sometimes, not more than five or six hours. Therefore, if a cow is intended for procreation, the earliest opportunity should be taken to let her have the bull; for, if then neglected, it will often be two or three weeks before the venereal appetite returns. If, after calving, a cow shows symptoms of coition sooner than four or five weeks, which is sometimes the case, she should not be permitted to have the bull sooner than a month from that period; for, before that time, the womb is generally in so relaxed a state, as to be incapable of conception.

A heifer should never have access to a bull before she is at least two years old, at which period nature is ripe for propagation; and when the time arrives for her calving, her parts will be strong and open, so as to enable her to give birth to her young with vigor and strength.

Have coops in readiness for young chickens—early ones are best.

Tobacco Beds.—These should be prepared and sown agreeably to the directions given last month, if not done before.

Kitchen Garden.—Continue the directions given in January and February, according to the climate and latitude of your place. Transplant in new hot-beds the cucumbers, cabbages, lettuces, cauliflowers, &c., sown last month. Seeds of cabbage, cauliflower, radishes, &c., may be sown in a warm border, on the south side of a wall or close fence, as soon as the frost is entirely out of the ground. At the same time sow a full crop of peas, kidney

beans, spinach, parsnips, carrots, beets, onions, turnips, parsley, &c.

Early Potatoes should be planted as soon as the ground can be properly pulverized or plowed. Before planting, the tubers should be cut into sets, rolled in dry ashes, plaster, or lime, and kept in a moderately warm, light place a few weeks. The ground in which they are to be planted should be liberally supplied with fine stable or horse manure, and thrown into beds or drills exposed to the morning and mid-day sun.

Sweet Potatoes may be planted this month in a hot bed, or some other warm place, where, in two or three weeks, they will throw out a number of runners, or sprouts, which, as soon as they reach a height of three or four inches above the surface, should be taken off, transplanted into hills four or five feet apart, in open ground, where the soil is light, rich, and finely prepared. In the course of the season, they may be hoed, earthed up, or treated in other respects like the common potato.

Fruit Garden and Orchard.—As soon as the ground is open and sufficiently dried, all kinds of fruit trees may be planted; also cuttings of grapevines, gooseberries, currants, raspberries, &c. If not done before, strawberry beds should now be uncovered, hoed, and cleaned. Fork up the earth around grape vines and fruit trees, and apply lime, leaf mold, ashes, manure, &c. In selecting all kinds of trees, whether for the purposes of ornament or fruit, be careful that you obtain none but the best, and see that they are properly planted, or set out. The holes should be dug of sufficient width to admit the roots without being doubled, or bent; and the ground should be trenched two spades deep, the lowermost of which should be cast away, and its space supplied with turf, leaf-mold, or peat, newly-slacked lime, wood ashes, or well-decomposed stable manure. Each tree should be planted at about the same depth as it originally grew in the nursery. Care should also be observed to surround the roots with the finest part of the mold that is taken from the pit. Water should likewise be liberally supplied as the earth is filled in, which should be firmly trodden down about the roots. If the planting be followed by dry weather, the trees must continue to be watered till their roots have taken effect.

Flower Garden and Pleasure Grounds.—As soon as the bulbs of plants begin to break ground, take off the litter; also uncover tender shrubs and flower borders.

WORK FOR MARCH, SOUTH.

Tobacco.—In the early part of this month, if the season has not required it before, select the ground for your tobacco crop. It should be a rich, sandy loam, capable of retaining moisture, and the more level the better. Plow or dig up the surface at least twice before planting, and level well each time. As soon as the young plants acquire a leaf the size of a dollar, take advantage of the first wet or cloudy day and commence setting them out in rows about three feet apart from north to south, and two and a half feet apart from east to west. In taking the plants up from the seed bed, the ground should be first loosened with a flat piece of wood

or iron, (a caseknife will do,) about an inch broad; then carefully holding the leaves closed in the hand, draw them up, and place them in a basket to receive them for planting. The evening is the best time for setting out plants, but it can also be done in the morning. Those set out in the morning, unless it be cloudy or rainy, should be covered during the day with palmetto leaves or other substances. Water the plants morning and evening until they have taken root. Fill up all vacancies where the plants die, with new ones.

Cotton.—The first fine weather after the twentieth of this month, commence planting your cotton seed. Put in one half of your crop ten days before the remainder, in order that you will not be too much driven in your harvest. Moisten your seed, and roll it with ashes and earth, and it will vegetate earlier, and will require a less quantity per acre.

Lowland Rice.—After your ground is well plowed and prepared by dikes and ditches for inundation, sow your *lowland rice*, broadcast, at the rate of two bushels to two bushels and a half to an acre, and cover it with a light harrow having many teeth.

Indian Corn.—Plant Indian corn if it was not done last month. Harrow and weed it, as soon as it is large enough.

Millet.—Sow millet about the twentieth of this month; manure the ground well, and you will be repaid for the labor.

Sweet Potatoes.—Bed out sweet potatoes as early as the season will permit. Place them on the level of the ground, previously dug up and raked even, as near as you can without touching; then cover them three or four inches, out of a trench dug all around the bed. This trench will keep the superabundance of water drained off, and therefore, the bed warmer. A bed 40 feet long and five wide will plant 15 or 20 bushels of potatoes. When there is no danger of frost, scrape off part of the covering; and thus enable them to vegetate earlier. Give the ground a liberal coat of manure.

Management of Stock, &c.—The remarks on this head for the north and west will generally apply to the south.

Sugar Cane.—Attend to your sugar cane, hoe, and keep it clear of weeds.

Kitchen Garden.—Plant southern and northern turnips, garlic, eggplant, celery, parsley, spinach, cress, leeks, roquet, sorrel, radishes, (long and round,) okra, early and dwarf beans, tomatoes, carrots, beets, endive, cabbages, lettuce, muskmelons, watermelons, cucumbers, squashes, pumpkins, peas, mustard, and artichokes. Tomatoes, peppers, egg plants, &c., may be transplanted in open ground toward the end of the month. Hoe the cabbages and lettuces which were sown in January and February, every ten days.

Fruit Garden, Shrubbery, &c.—Prune orange and lemon trees; also other delicate ornamental evergreen shrubs.

IMPORTANT FACT IN PLANTING ORCHARDS.—It is an indisputable fact, that an orchard planted in the quincunx form will contain one eighth more trees than one planted in the common way, the distance of the trees apart in both cases being the same. See p. 331, of our sixth volume

ROTATION OF CROPS.

THE experience of husbandmen, from the earliest times, has shown that the same kinds of plants,

with few exceptions, cannot be cultivated advantageously in continued succession on the same soil. The same or similar species have a tendency to

I.—TABLE OF ROTATIONS IN AN ORDINARY SANDY SOIL.

First Year.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.
			Buckwheat	Carrots	Potatoes	Barley and Turnips	Indian Corn or Carrots		
			Oats	Clover	Barley and Turnips	Potatoes	Rye and Turnips		
Indian Corn or Carrots	Rye and Turnips	Rye and Turnips	Potatoes, Peas, or Carrots	Oats or Rye	Clover	Rye, or Barley and Turnips	Oats or Potatoes	Indian Corn or Carrots	Rye and Turnips
			Peas and Turnips	Buckwheat	Potatoes	Oats	Indian Corn or Carrots		
Indian Corn	Rye	Clover	Rye and Turnips	Rye and Turnips	Oats or Buckwheat	Potatoes	Rye and Turnips	Indian Corn	Clover
						Carrots	Rye and Turnips		
Indian Corn or Clover	Clover	Oats or Peas	Rye and Turnips	Rye and Turnips	Buckwheat, Potatoes, or Carrots	Barley and Turnips	Oats	Rye and Turnips	Indian Corn
						Rye and Turnips	Rye and Turnips	Indian Corn	

II.—TABLE OF ROTATIONS FOR THE RICHEST KIND OF LIGHT SOIL.

First Year.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.
	Wheat or Indian Corn	Rye and Turnips	Rye, Barley and Turnips	Potatoes	Wheat or Indian Corn	Rye and Turnips	Flax	Clover	
			Potatoes	Wheat or Indian Corn	Rye, Barley and Turnips	Oats	Flax or Carrots	Rye	Clover
Flax, Clover, * or Carrots	Oats	Rye, Carrots or Barley and Turnips	Potatoes	Wheat or Indian Corn	Rye and Turnips	Barley and Turnips, or Oats	Flax	Clover	
	Barley and Turnips	Rye or Carrots	Potatoes	Wheat or Indian Corn	Rye and Turnips	Flax or Carrots	Oats	Clover	

*If Clover is sown with the flax, it is cut in the second year, and another year is added to the rotation; but in England, it is more usual to sow carrots with the flax, and sow oats or barley the second year.

III.—TABLE OF ROTATIONS FOR A GOOD CLAY OR STRONG LOAM.

First Year.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.
		Oats	Carrots or Barley and Turnips	Wheat or Indian Corn	Rye and Turnips	Potatoes	Wheat or Indian Corn	Rye and Turnips	Flax
				Beans	Wheat or Indian Corn	Rye and Turnips	Potatoes	Rape or Carrots	Flax
	Clover	Barley and Turnips	Rape, Carrots, or Beans.	Wheat or Indian Corn	Rye and Turnips	Potatoes	Rye and Turnips, Wheat or Indian Corn	Oats or Flax.	Flax
	Wheat or Indian Corn	Barley	Beans	Wheat or Indian Corn	Rye and Turnips	Potatoes	Rape and Turnips	Oats or Flax	
Flax		Rye and Turnips	Oats, Clover, or Potatoes	Clover, Rape and Turnips	Wheat or Indian Corn	Rye and Turnips	Flax		
	Rape and Turnips*	Wheat or Indian Corn	Rye and Turnips	Oats	Clover	Wheat or Indian Corn	Rye, or Barley and Turnips	Oats or Flax	

*Is to be understood that wherever turnips are associated with any plant, they are to be sown in July, after harvesting the other crop.

grow feebly, degenerate, or become more subject to diseases, when cultivated consecutively upon the same ground; and hence the rule which forms the basis of a system of regular alternation of crops

is, that plants of the same or allied species are not to be grown in immediate succession, and furthermore, the same rule would imply that similar kinds of crops should recur at as distant intervals of the course as circumstances will allow.

As no particular systems of rotation have as yet been established in the United States, the foregoing are offered for the consideration of the cultivator, until better ones can be found. It is to be understood, however, that they are adapted only to strong new soils or to older ones brought into and maintained in good tilth by the aid of manures.

When tobacco, hemp, cotton, or sugar cane is to be cultivated, a place should be assigned for it, according as it is raised as a green crop, for its fibre, or for its seeds. Thus, in the preceding tables, cotton or hemp, cultivated for their seeds, may take the place of wheat or Indian corn; and tobacco may follow either of these by again restoring the soil with manure. * B. *

GRASSES, MEADOWS, AND PASTURES.—No. 2.

Flat-Stalked Meadow, or Blue Grass, (Poa compressa,) is an early dwarfish grass, which abounds in the middle and northern states. It is tenacious of its foothold wherever it intrudes. It possesses little merit as hay, but is valuable for pasture, affording as it does, a close covering to the ground, and yielding much in a small compass.



FIG. 14.



FIG. 15.

The Annual Meadow Grass, (P. annua,) Fig. 14.

—This grass flourishes in most soils, and in nearly all situations. It affords an early and nutritive herbage, and is relished by all animals. It is perpetually flowering, and affords an abundance of rich seeds. It is hardy and self-propagating and seldom requires to be sown, but springs up wherever the ground is uncultivated.



FIG. 16.

Narrow-Leaved Meadow Grass, (P. angustifolia,) Fig. 15. This is an early pasture grass, throwing out a profusion of slender leaves. It flowers

late, and before it has reached this point of its maturity, it is liable to rust, which diminishes its value for hay. It is for this reason, as well as its diminutive size, much better adapted to pasture than hay.

Red Top, Herds' Grass, Foul Meadow, or Fine Bent Grass, (Agrostis vulgaris,) Fig. 16, is a hardy, luxuriant grass, loving a very moist soil, and somewhat indifferent as to its texture. The scale of its nutritive properties is put down in the Woburn experiments, at a remarkably low rate, being less than one fourteenth of the value per acre of Timothy in the seed. We think there must be an error in this estimate, as it grows luxuriantly under favorable circumstances, and is relished by cattle. It is seldom cultivated by observing farmers, where the better grasses will grow.

Upright Bent Grass, Herds' Grass, or Foul Meadow, (A. stricta,) is similar to the foregoing, and by some is deemed only a variety.

Tall Oat Grass, (Avena elatior,) is an early luxuriant grass, growing to the height, sometimes, of five feet. It makes good hay, but is better suited to pasture. It flourishes in a loam or clay soil.



FIG. 18.

FIG. 17.

FIG. 19.

The Tall Fescue, (Festuca elatior,) Fig. 17, would appear by the Woburn experiments, to yield more nutritive matter per acre, when cut in flower or seed. This is a native of the United States, and is best suited to a rich loam. It is not extensively cultivated in this country.

Meadow Fescue, (F. pratensis,) Fig. 18, likes a rich boggy soil, bears well, and produces an early grass, much relished by cattle, either green or cured as hay.

Spiked Fescue, (F. loliacea,) Fig. 19, is adapted to a rich loam, and produces the best of hay and pasture.



FIG. 20.



FIG. 21.

The Purple Fescue, (F. rubra,) *Sheep's Fescue, (F.*

ovina,) Fig. 20; *The Hard Fescue*, (*F. duriuscula*), Fig. 21; and the *Floating Fescue*, (*F. fluitans*), Fig. 22, are all indigenous to this country, and good pasture grasses. The last two are good hay grasses, though the former is rather diminutive.

The floating fescue requires to grow in a very wet and strong clay soil, when it will be found to yield a large burthen of nutritive forage. The seeds are small but abundant, sweet, and fattening. All fowls are fond of the seed, and all animals of the seed and herbage.



FIG. 22.



FIG. 23.

Orchard, or Cock's Foot Grass, (*Dactylis glomerata*), Fig. 23 is indigenous, and for good arable soils, and especially for such as are shaded, it is one of the most profitable of grasses grown. It should be cut for hay before it is ripe, as in seeding it becomes coarse and hard, and is less acceptable to cattle. It is ready for the scythe with the clover, and after cutting, it immediately springs up and furnishes three or four crops of hay, or constant pasturage throughout the season. It should be fed closely, to secure a tender, succulent herbage. The seed is remarkably light, weighing 12 or 15 lbs. per bushel. Twenty to thirty pounds are usually sown upon one acre; yet ten pounds on finely-prepared soils have been known to produce a good sod, over the entire ground. It flourishes from Maine to Georgia.

American, or Swamp Cock's Foot, (*D. cynosuroides*), is an indigenous swamp grass, yielding a large amount of grass or hay of inferior quality.

Biennial Rye Grass, or Ray Grass, (*Lolium perenne*, or *bienne*.) Fig. 24, and *Italian Rye Grass* are highly esteemed grasses in Europe. They have been more or less cultivated in this country for many years. They were not successful on their first introduction here, owing to our severe frosts. Recent experiments, however, have shown them to be sufficiently hardy for the middle states; and they are now extensively cultivated in the neighborhood of New York, where they are highly esteemed both for hay and pasturage. On good soils, they yield large returns of valuable forage. It is better to sow early in the spring, either by itself or with barley. With oats or wheat, it does not succeed so well. When put in with Timothy and orchard grass, the latter has usurped the place of both the others in a few years. Heavy clay lands are liable to throw out the roots by frost, and thus winter-kill.

Fiorin Grass, (*Agrostis stolonifera*), Fig. 25, has been much lauded in England of late, but it has made little progress in the estimation of American farmers, and probably with sufficient reason. It is a diminutive grass, affording considerable nutriment in a condensed form, and is adapted to a winter pasture. It grows on a moist clay or boggy soil.



FIG. 24.



FIG. 25.

It is probably on such, and in moist climates only, that it attains its full size, character, and value. Many results have been attained with it in England and Ireland, which would seem to commend it, as a valuable forage plant, in its appropriate soil and climate. Several of the fiorin family abound in this country, among which is the squitch, couch, or quick grass, which are considered as pests in the cultivated fields.—*Allen's American Farm Book*.

ADULTERATION OF FOOD.—NO. 9.

Pickles.—These, it is well known, are generally vegetable substances, infused in vinegar, and seasoned with spices or aromatic substances of various kinds. In some, the chief aim of the manufacturer is to render them as white as possible, as onions, cauliflowers, &c.; in others red, as cabbages and tomatoes; and lastly, in others green, as cucumbers, gherkins, the pods of beans, capscums, &c.; and it is the last-named class with which we have principally to deal; for, in the greater part of them, their green color is due to the presence of copper. Indeed, some go so far as to assert that it is impossible to make green pickles without the use of this metal. This, however, would seem to be disproved, if the directions given at p. 290, in our sixth volume be correct.

It has been the custom from time immemorial to use copper for the purpose of imparting a green color to pickles, as may be gathered from many books on cookery, and in fact, most of those ordinarily sold in market, are contaminated with this metal, and sometimes it is practiced to an alarming extent.

In some of the recipes for greening pickles, it is recommended to boil the vinegar in a bell-metal or copper pot, and pour it boiling hot on the substance to be pickled; in others, a mixture of verdigris, (diacetate of copper,) distilled vinegar, alum, and salt are recommended; and in a third method, this system of poisoning is made more simple and easy by scalding the substances to be pickled in a brass

kettle or in an iron or tin one with our common copper coins.

Vinegar.—This well-known condiment is prepared either from sugar and water or the saccharine juices, or sap, of trees and plants, the infusions of malt, malt liquors, wine, and cider; and, lastly, by the destructive distillation of wood, in cast-iron cylinders.

The ordinary vinegars of commerce are frequently adulterated with sulphuric acid, to give them more acidity, and with different acrid vegetable substances to produce an apparently stronger article. Among these, the most common are the grains of Paradise, spurge flax, and capsicums. Much of the vinegar sold under the name of "white-wine" consists of strong acetic or pyroligneous acid, diluted with water. A similar mixture is also sold for distilled vinegar. And finally, several salts are found in vinegars, as those of lead, copper, acetate of lime, chalk, and common salt. The latter are generally added for the purpose of increasing the density of the vinegar, where its strength is liable to be ascertained by means of the hydrometer. In some cases, however, the salts of lead, copper, and of zinc, found in vinegar, are derived from contact with leaden and brass vessels in which it is kept, and from the taps employed in the apparatus made use of in its manufacture.

Anchovy Sauce and Paste.—Not only are the sauce and paste, prepared from anchovies adulterated, but even the fish themselves are imitated; and in fact, very many bottles sold under the name of anchovies, are nothing but prepared sprats. This, however, is easily detected, for the appearance of the two fish is very different, and an attentive examination of the form of the two will suffice to point out the distinguishing characteristics of each, in so marked a manner that the fraud will at once be detected.

The falsification as regards the fish, however, is unimportant, when compared with the deleterious nature of the substances employed in manufacturing anchovy sauce and paste. For, the red color of both these preparations is due to an admixture of Venetian red, which, in itself, is comparatively harmless, but which, when taken in quantity, might occasion serious obstructions in the bowels. This, however, is not the worst; for Venetian red is sometimes mixed with red lead to heighten its color, and it is to be feared, that the more unscrupulous of the manufacturers of these articles purposely add this poisonous substance, which results in much sickness and even the loss of life itself.

Anchovy sauce and paste are also adulterated by bruising up sprats and other cheap fish into a pulp, mixed with flour and the necessary seasoning for anchovy sauce; and even a very large percentage of flour with plaster of Paris and chalk is fraudulently introduced to the exclusion of a corresponding proportion of fish. When chalk and plaster are added, red lead is substituted for Venetian red, in order to make up for the decrease of color the white admixture occasions.

A LARGE HORSE will eat 10 lbs. of oats, 4 or 5 lbs. of hay, and about 60 lbs. of carrots in a day.

SCHOOL OF AGRICULTURE AT METTRAY.

THE colony at Mettray, near Tours, about 150 miles from Paris, was founded in the spirit of the good Samaritan, which succors the wounded and forsaken traveller by the wayside, takes him home, and there nourishes and cherishes him. This establishment grew out of the compassion of two gentlemen of high rank and fortune, who were moved to essay what could be done for the rescue of unfortunate, condemned, and vagabond boys, to save them if possible from destruction, and give them the power of obtaining an honest living. It is not consistent with my plan, in this place, to go further into the account of the institution, than as a *School of Agriculture*, though the directors propose three objects of instruction to qualify their pupils for farmers, sailors, or soldiers. The discipline of the institution is military. They have a full-rigged ship of ample size in the yard, that boys designed for naval life may here take their first practical lessons; and they have a well-stocked farm of 500 acres, which is under direction to be cultivated by the pupils. The institution is situated in a healthy part of the country, and near a large market town. They employ an educated and experienced agriculturist as director of the farm. The first object is to render it productive, that it may go as far as it can be made to go towards defraying the expenses of the institution; the second, to instruct the boys in the best and most improved methods of husbandry.

The institution had its foundation in private subscription, and though in its commencement it had many difficulties to struggle with, it has now a firm establishment. Besides a farm, there are connected with the institution a large garden, an extensive nursery, and a manufactory for the fabrication of all the implements, carriages, &c., which are used on the farm. The boys are likewise employed in the making of the shoes, caps, clothes, and bedding, which are required, and many fancy articles which serve for sale, and give them occupation, when by any circumstances they are prevented from out-door labor. The number of pupils is at present 450. It is not intended to keep them after sixteen, but they are willing to receive them at the earliest convenient age. I saw several not more than six or seven years old. They live in families of forty or fifty, in separate houses, under the care of a respectable man and his wife, who give them their whole time. This seemed to me a most judicious provision. They have a guardian with them in the fields, who always works with them. Many of them have been condemned at courts of justice for some petty offence, and many of them, orphans and friendless, have been taken up in the streets in a condition of miserable vagabondage. The discipline of the institution is altogether moral and paternal. Confinement, abstinence, solitude, and disgrace constitute the chief punishments; but there are no whips, no blows, nor chains. It has been so far eminently successful. A boy, who had been early familiar with punishment and prisons, and now for some time a resident at Mettray, was asked, Why he did not run away from Mettray? His memorable answer was, "Because there are no bolts nor bars to prevent me."

When one looks at the innumerable herds of children, turned, as it were, adrift in a great city, not merely tempted, but actually instructed, stimulated and encouraged, in crime, and observes them gradually gathering in and borne onwards on the swift current with increasing rapidity to the precipice of destruction, until escape becomes almost impossible, how can we enough admire the combined courage, generosity, and disinterestedness, which plunges in that it may rescue some of these wretched victims from that frightful fate which seems all but inevitable? I do not know a more beautiful, and scarcely a more touching passage in the Holy Scriptures than that which represents the angels in heaven as rejoicing over a repenting and rescued sinner. It is, indeed, a ministry worthy of the highest and holiest spirits, to which the Supreme Source of all goodness and benevolence has imparted any portion of his Divine nature.

If we look at this institution even in a more humble and practical view, as affording a good education in the mechanical and agricultural arts, its great utility cannot be doubted; and much good seed will be sown here, which, under the blessing of God, is sure to return excellent and enduring fruits.

I should have said before, that there is connected with the institution a hospital which is a model of cleanliness, good ventilation, and careful attendance; all the services of which were rendered by those indefatigable doers of good, the Sisters of Charity.—*Colman's European Agriculture.*

MORAL INFLUENCE OF VINEYARDS.

In a moral view, one would at first be inclined to dread the effects of such a production, (wine,) upon the habits of the people. It would not be true to say there is no drunkenness in France; but, account for it as we will, temperance is pre-eminently the characteristic of the French people, and I believe them to be, without question, the most sober of all civilized countries. In the rural districts, wine is the ordinary drink; but this is not in itself a strong wine, and is almost invariably diluted with water.

Much complaint has been made that such immense tracts of land are devoted to the production of wine instead of bread; but, in many of the bread-growing countries, a far larger proportion in value of the product has been devoted to the manufacture of a drink far more intoxicating, and much more fatal to peace, public order, domestic happiness, and all good morals, than the mild and ordinary wines of France; which, when unadulterated, are the pure juice of the grape, and have not the strength of common cider. I was in the vine-growing countries in the season of the vintage, when wine in the greatest abundance was free to all, but there was no more excess than at any other season. We could hardly expect these laborious people, whose chief solid subsistence is bread, to limit themselves to water, and we could not but feel grateful that God had given them so innocent and delicious a beverage to cheer and sustain them under their toil. It is not the use but the abuse of these precious gifts of heaven, which constitutes the criminality, and converts them into a fatal poison.—*Ib.*

NEW-YORK STATE AGRICULTURAL SOCIETY.

THE Annual Meeting of this Society convened at the Assembly Chamber, in Albany, on Wednesday, January 17th, and continued in session two days.

The Annual Reports of the Treasurer and Executive Committee were read and accepted.

The following are the names of the officers of the society for the ensuing year:—

For President, John A. King, of Queen's.

For Vice Presidents, 1st District, James Monroe, of New York.

2d District, Saxton Smith, of Putnam.

3d " E. P. Prentice, of Albany.

4th " Le Roy Mowry, of Washington.

5th " William Fuller, of Onondaga.

6th " David Maine, of Madison.

7th " John Delafield, of Seneca.

8th " Henry W. Rogers, of Erie.

Corresponding Secretary, Benjamin P. Johnson, of Albany.

Recording Secretary, John Mc D. Mc Intyre, of Albany.

Treasurer, Luther Tucker, of Albany.

Executive Committee, J. B. Burnett, of Onondaga; P. N. Rust, of Onondaga; Henry Wager, of Oneida; J. J. Viele, of Rensselaer; Samuel Cheever, of Saratoga.

The Hon. J. P. Beekman, from the committee appointed from each judicial district, under the resolution of Mr. Peters, made the following report, which was adopted:—

Resolved, That the committee do recommend to the Executive Committee, the city of Syracuse as the location of the next Fair, provided security be given to the satisfaction of the Executive Committee, that the local expenses of the fair be discharged by the citizens of Syracuse, the sum not exceeding \$3,500.

The secretary announced that he had received from Mr. Hovey, of Boston, a splendid volume of "Hovey's Fruits of America," as a present to the society.

On motion of Mr. Marks, of Greene, it was

Resolved, unanimously, That the thanks of the New-York State Agricultural Society, be presented to C. M. Hovey, of Boston, for the gift to the society of his superb work on the "Fruits of America."

The secretary laid before the society a copy of the second volume of Professor Emmons' work on Agriculture, being part of the series of the Natural History of the state, whereupon on his motion, it was,

Resolved, That the work of Professor Emmons on Agriculture be recommended to the examination of the Executive Committee, and that if by them approved, that an abridgement of it be recommended for publication and diffusion through the schools of the state.

The President having alluded to the splendid collection of valuable fruits, which had been brought together on the tables of the society, offered the following resolution:—

Resolved, That Messrs. Wendell, Howard, and Johnson be a committee to prepare samples of our best winter fruits, and forward a box to the London, Paris, and Belgium Horticultural Societies,

with a letter from the secretary of this society, in relation to the same.

On motion of Mr. Cheever, of Saratoga, it was

Resolved, That a committee of three be appointed to apply to the Canal Board for a reduction of tolls on agricultural implements, fences, seeds, and manures.

On motion of Mr. S. A. Foot, of Ontario, it was

Resolved, That the society petition the Legislature to pass a law directing the publication of a large edition of the Natural History of this state, and the sale of the same to the citizens thereof, at the cost price of publication, and that the president and secretary prepare such petition, sign the same in behalf of the society, and present it to the Legislature.

On motion of Mr. B. P. Johnson, it was

Resolved, That the society most cordially approve of the recommendation of His Excellency, the Governor, on the subject of AGRICULTURAL SCHOOLS, and would respectfully and earnestly urge its consideration, and the early action of, by the Legislature.

An analysis of Indian corn, for which the society had offered the sum of \$300, was presented by Mr. James H. Salisbury, of Albany, which was referred to a committee for examination.

HYBRIDIZATION AND CROSS FECUNDATION OF PLANTS.

HYBRIDIZATION, strictly speaking, is the art or act of obtaining an offspring or progeny between two different species of animals or plants; and *cross fecundation* or *cross breeding* is the production of a progeny or race between varieties of the same species. It was maintained by Buffon, Hunter, and other naturalists of the last century, and is yet assumed by many scientific men of the present day, that the hybrid offspring or progeny of two distinct species of animals or plants is incapable of begetting or reproducing its kind; thus making hybridity the test of specific character. From this we may infer, that the progeny of hybrid plants cannot produce seeds; but that produced by cross fecundation may be regarded as fertile.

The observations and experience of practical gardeners and florists would seem to justify the following maxims, as affording some guide to the production of new varieties or races:—

1. The existence of sexes in plants is now universally acknowledged, as occurring in the same flower,—in separate flowers on the same plant, or tree,—as well as in those of trees distinct from one another.

2. Plants nearly related, that is, closely similar in the structure of their several parts, are those only which will immediately impregnate with each other; but it is impossible, at present, to say what families of plants may or may not be brought into fertile union through intermediate crosses. Not long ago, the azalea and rhododendron were thought to be incapable of such union; but this opinion is now exploded; for the Pontic rhododendron, (*R. ponticum*), has been fecundated with the pollen of the Chinese azalea, (*A. sinensis*), and the progeny between that evergreen and the last-named deciduous-leaved shrub, is the previously-unknown phenomenon, a yellow rhododendron. In like manner, the

brassicas, (cabbages, turnips, &c.,) mix freely with brassicas in all their gradations, as well as the cucurbitaceæ (melons, pumpkins, gourds, &c.) There are some exceptions, however, to this rule; for the beautiful pelargonium and the scarlet geranium, though nearly allied, according to the classification of modern botanists, have not, hitherto, been able to mix. Again, the raspberry and strawberry are regarded as first cousins; yet, after several attempts, they have not hybridized. The gooseberry and currant, too, are nearly related; still their alliance seems invincible, though tried by skilful hands.

3. The color of the future blossoms, (not of those first hybridized,) seems to be most influenced, though not invariably, by the male plant, if its seeds and flowers are darker than those of the female. Mr. Knight found, that when the pollen of a colored-blossomed pea was introduced into a white one, the whole of the future seeds were colored. But when the pollen of a white blossom was introduced to the stigma of a colored blossom, the whole of the future seeds were not white. Captain Thurtell, from lengthened observation and experiment, also informs us, that he has always found the color and spot of the petals of the pelargonium to be more influenced by the male than by the female plant. On the contrary, however, he observed that the form of the petals follows most closely that of the male plant.

4. Large stature and robustness of habit, according to Mr. Knight, are transmitted to the progeny by either of the parent plants. Therefore, it does not absolutely matter, for obtaining this characteristic, whether the plant, male or female, be large; but he generally found that the most robust female plant produced the finest result. When a good fruit or culinary vegetable is wanted, he recommends that the largest seed from the finest fruit or plant, that has ripened earliest, and most perfectly, should always be selected. In stone fruits, if two kernels are in one stone, these give birth to inferior plants. The florists of the present day, however, are opposed to Mr. Knight in their practice, as regards the hybridization or cross fecundation of ornamental flowers; for they recommend the weakest plants, and those that germinate last, where chastity of form and beautiful marking are required, to be taken the greatest care of, as they are sure to produce the most valuable flowers.

Mode of Obtaining Varieties.—The most successful mode of obtaining good and very distinct varieties, is to employ the pollen of a male flower, grown on another plant, from a distance, and not that bearing the female, or that in which the fecundation is to take place. When the plants are in flower, carefully extract with a pair of sharp-pointed scissors the anthers, if any, from the female flower from which you intend to produce seed, and also destroy all male flowers, or those having anthers, of the same species that are in the immediate vicinity, before they arrive at maturity, or your attempts will be of no avail; for Nature will have performed her part, and instead of a hybrid, you will have a natural progeny. In order further to avoid previous and undesired impregnation, the female flower should be inclosed in a case covered with gauze, and thus continued until the process

of hybridization is complete, to exclude insects, and the effects produced by strong currents of air before the desired pollen is ripe. Another effectual mode of preventing undesired impregnation is bringing the female plant into flower a little earlier than its congeners, and removing the anthers as directed above. For the stigma will remain vigorous, if unimpregnated, for several days.

After extracting the anthers from the flower you wish to bear seeds, carefully watch the progress of the stigma, and as soon as you find it in a condition to receive the pollen, select the matured anthers from a distance, and bring them in gentle contact with the stigma, to which a sufficient quantity of pollen will adhere. If a double flower should chance to have a fertile anther or two, these should be employed for fertilization, as the flowers of their progeny will almost be sure to be double. Although the fecundity of all the seeds in one seed vessel may be secured by applying pollen only to one style, even where there are several, yet the quantity of pollen is by no means a matter of indifference. Koelreuter found, that from 50 to 60 globules of pollen were required to complete the impregnation of one flower of *Hybiscus siriacus*; but in *Mirabilis jalapa*, and *M. longifolia*, two or three globules were enough; and in the case of *pelargoniums*, Captain Thurtell says two or three globules are certainly sufficient.

In the course of the process, the seed vessel is not altered in appearance, by impregnation, from that of another plant; therefore, no hasty conclusion of failure is justified by that want of change. It is easy to discern, however, whether the fecundation has been effected; for, when this is the case, the stigmas soon wither. The stigmas which have not received the pollen remain for a long time vigorous and green.

M. Haquin, a distinguished horticulturist at Liege, has impregnated flowers of the azalea with pollen kept six weeks; and camellias with pollen kept 65 days. He gathers the stamens just before the opening of the anthers, wraps them in writing paper, places them in a warm room for a day, collects the pollen they emit, and preserves it in sheet lead, in a cool dry place. Mr. Jackson, of Cross-Lane Nursery, near Bedale, states that he found the pollen of *Rhododendron smithii tigrinum* to retain its fertilizing power even for twelve months. This property of pollen was verified by experiment, in Persia, by the elder Michaux, as early as the year 1782, in observing that the male flowers of the date, (*Phoenix dactylifera*), will keep during the year, and yet impregnate the female.

. D. J. B.

New York, Feb. 3d, 1849.

AMERICAN PRODIGALITY.—No observing American comes from the United States to Europe, without soon becoming convinced that economy of living is nowhere so little understood as in his own country; and that for nothing are the Americans more distinguished, than for a reckless waste of the means of subsistence. The refuse of many a family in the United States, even in moderate circumstances, would often support, in comfort, a poor family in Europe.—Colman.

CULTIVATION OF LOWLAND RICE.

THE most favorable situations for cultivating the common, or lowland rice, (*Oryza sativa*), are on the rich alluvial lands in Carolina and Georgia, where the fresh waters of the rivers, in their descent, repel the salt waters of the sea, which, twice in 24 hours, rise high enough to irrigate these lands—and twice in 24 hours, fall low enough to drain them. In order to protect them from overflowing by the tides, or freshets, caused by copious rains or the melting of mountain snows, dykes, or embankments, are constructed along the borders of the rivers, their height and distance from the river brink, depending on local circumstances. When the dykes around the fields have been completed, water gates, (called also trunks, or flood gates,) are put down sufficiently low to drain the water from the lands when the tide subsides in the river, and to reflow them whenever it may become necessary for the crop, when the tide is full.

These objects being fully accomplished, the ground may be reduced to good tilth by the plow, hoe, or spade, and harrowed twice, in as dry a state as possible before sowing. In the southern states of the Union, as well as in most of the West-India Islands, as soon after the equinoctial rains in March as is practicable, the soil may be prepared for sowing by making trenches 14 inches apart, with a hoe or a double-moldboard plow, into which the paddy, or rice seeds, may be carefully scattered and then covered with two inches of soil; or the seed may be sown broadcast, at the rate of two bushels to two bushels and a half to an acre, and immediately covered with a light harrow having many teeth.

As soon as this operation is completed, the flood gates should be opened, the water let in, and kept on the field from five to ten days, or until the rice is found to be germinating at its bud. The water should then be withdrawn from the field from four to ten days, or until the green plants are seen rising about the field or along the drills. Next, the water should be let in upon the field and kept there from two to four days more, which will push the young plants forward. Again the water should be withdrawn for the second time, and as soon as the rice has risen a few inches in height, and the surface of the soil becomes dry, the grass and weeds should be carefully cleaned out from the drills, and the intermediate spaces lightly hoed, and the field left to dry for two or three days, in order that the weeds may be completely killed by the sun. The water may then be let in for the third time, for a period of a week or ten days more, taking care not to let it in too deep, (say three or four inches,) so as not to drown the plants in the lower parts of the field, it being a good sign to see the tops of the young rice plants just above the water. For the third time, the water may be withdrawn, and as soon as the ground is sufficiently dry, the plants carefully hoed again, but deeper this time than the first. The field being thus cleaned, it may be flooded again for the fourth time, and if water can be had, the plants may be thus kept until four or five days of harvesting the crop, which may be known by three or four of the lowermost grains of the rice beginning to turn yellow.

In China, as well as in some parts of Italy, where

they depend upon flowing their rice lands either upon the rise of the rivers above their banks in periodical freshets, which is but for a short portion of the year, or from tanks and reservoirs, where water is kept in reserve to let down upon their fields as occasion may require, the ground is most carefully prepared. In Italy, they plow and harrow their lands, let a small portion of water upon them, and while the soil is in a semi-fluid state, the rice is sown broadcast over the fields and the water is not suffered to be drawn off until just before the rice is cut. Consequently all hoeing or weeding must be done by the laborers wading in the water, very much to their inconvenience and great injury of their health.

In China, during the growth of the rice, which is first sown in patches and then transplanted in drills, 10 or 12 inches apart, the fields are always kept flooded, when water can be obtained. The terraces near the base of the hills are supplied by the mountain streams, and the fields, which are just above the level of any adjoining river or canal, are flooded by the ancient water wheel that is in use all over the country. The rice lands are kept flooded in this way until the crops are nearly ripe, when the water is no longer of use. Once or twice, at least, in the course of the summer, it is deemed necessary to go over the ground and well stirring the soil amongst the roots, at the same time, removing any weeds which may have sprung up.

THE COW—HER DISEASES AND MANAGEMENT.— No. 10.

Inflammation of the Bag or Udder.—This is a very common disease, also called "garget," or the "yellows," the attack of which is generally sudden. Milking cows are most subject to it, more particularly old ones; and if the complaint is not early checked, the loss of one or more of the quarters, (of the bag,) is generally the consequence. Therefore, proper medicines cannot be too soon administered to stop its progress; for, if neglected in the first instance, and the inflammatory symptoms should rapidly increase, it is liable to extend into the body of the animal and attack some of the vital parts, and death will be the result.

The most predominant cause of this disorder is from catching cold or a bad habit of the body, but more frequently the former. It may also proceed from other accidents, such as kicks, blows, or a poke from another animal; and sometimes by laying on the part affected herself, which is not unfrequently the case.

The first symptoms of the complaint are a sudden swelling in the milk bag or udder, in one or more of the quarters, attended with costiveness, fever, and loss of appetite; and previous to the attack, it is not unfrequently preceded by a cold shivering, or shaking of the extremities; and when the teats are drawn, the milk is dreggy or becomes coagulated. As the disease advances, the watery part of the milk is bloody, and, as the swelling augments, the bag becomes more red and inflamed, which gives the cow great pain when touched; her hair stands on end, and her hide soon adheres tight to the ribs. When the loss of a quarter takes place, and the inflammatory symptoms abate, the milk soon forms into complete corruption, or partakes of the character of pus.

If the disease originates from cold or bad habit of the body, bleeding is absolutely necessary, and no time should be lost in performing the operation. The quantity of blood to be taken must depend entirely upon the age and strength of the animal and the urgency of the case. Two or three quarts may be taken, if the cow is in good condition and the inflammatory symptoms run high; but if lean, or low in flesh, half the quantity will suffice. The best place to perform this operation is in the milk veins which are distinctly to be seen on each side of the belly, and communicate directly with the udders. Bleeding from these has a better effect in reducing the inflammation, than when drawn from any other vein, as it takes the load much sooner from the oppressed vessels, and consequently gives more room for circulation. When the operation of bleeding is finished, the following mixture may be given, at one dose, milk warm, in a pint of strong beer or ale:—

Sulphur, from 9 to 12 oz.; grains of Paradise, (cardamoms,) or long pepper, $\frac{3}{4}$ oz.; cummin seeds, $\frac{3}{4}$ oz.; tumeric, $\frac{3}{4}$ oz.; water gruel, 3 pints; molasses, 3 gills.

This drink will generally begin to operate in about twelve hours from the time it is given, if it does not meet with any particular obstruction in its passage; otherwise, it may be twenty-four hours. If it should not then operate, from three gills to a pint of cold-drawn linseed oil may be administered with the same quantity of tepid water gruel in which a small handful of common salt has previously dissolved. When this drink has done operating, the following medicine is to be given at one dose, in a quart of warm beer or ale, wherein a small handful of the leaves of wormwood or rue has been previously chopped and boiled:—

Flour of sulphur, 3 oz.; saltpetre, (nitre,) $1\frac{1}{2}$ oz.; madder, $1\frac{1}{2}$ oz.; grains of Paradise, $\frac{3}{4}$ oz.; valerian, $\frac{3}{4}$ oz.; cummin and coriander seeds, each, $\frac{3}{4}$ oz.

In the course of the treatment, each diseased quarter should be drawn out three or four times a-day, not forgetting, at the same time, to give friction to the parts affected with the hand; they should also be rubbed twice a-day with the following liniment:—

Lime water, 4 oz.; linseed oil, 2 oz.; spirits of turpentine, 2 oz.

The linseed oil and spirits of turpentine are first to be mixed together, after which the lime water must be added by degrees and well shaken, in order to make them unite.

If the inflammation runs high, and there is danger of mortification, the following ointment may be rubbed on the parts affected twice a-day:—

BLACK OINTMENT.

Take hogs' lard, 4 oz.; oil of vitriol, (sulphuric acid,) $\frac{1}{2}$ oz.; spirits of turpentine, 1 oz. Mix together for use.

The parts may also be fomented once or twice a-day with the following decoction which may be applied with woollen cloths or a large sponge:—

Wormwood, a large handful; camomile flowers, 4 oz.; bayberries, (*Laurus nobilis*), 2 oz.; juniper berries, 2 oz.

To be boiled in six quarts of beer grounds, (emptings,) or in water if these cannot be procured. It will also be advisable to give at one dose, in a

quart of warm strong ale, once or twice a day, the following medicine:—

Peruvian bark, $\frac{3}{4}$ oz.; powdered gentian, $\frac{3}{4}$ oz.; saltpetre, $1\frac{1}{2}$ oz.; valerian, $\frac{3}{4}$ oz.

The regimen of the cow, in this case, should consist of warm water or thin gruel, sweet hay, and once or twice a-day, a mash may be given made of malt, bran, or Indian meal, which is a very proper food during her illness, as it always tends to keep her body in a regular state.

When the disease proceeds from external accidents, such as pokes from other cows, kicks, blows, or by lying on the udders, or from the tread of another animal, the first method of cure is to bleed to the amount of from one to two quarts, according to the strength and condition of the cow, and then give, at one doze, milk warm, in three pints of water gruel, with which half a pint of molasses has been added, the following mixture:—

Epsom salts, from $\frac{3}{4}$ to $1\frac{1}{2}$ lbs.; valerian, $\frac{3}{4}$ oz.; cummin and anise seeds, each $\frac{3}{4}$ oz.; tumeric, $\frac{3}{4}$ oz.

After the operation of this medicine, the following may be administered, at one dose, in three pints of water gruel, once a-day, till the inflammation is removed:—

Saltpetre, 3 oz.; fenugreek, in powder, $1\frac{1}{2}$ oz.

In the mean time, the liniment described above is to be applied twice a-day to the swollen parts, and the bag rubbed hard as before recommended. If these rules are strictly adhered to, the cure will soon be complete.

This malady may also arise from improper milking, as leaving too great a quantity behind, in consequence of which the bag will swell, and the milk therein become ropy, coagulated, or thick; and if this practice be continued, it will frequently cause the loss of one or more quarters. Therefore, the bag should be clearly milked out; otherwise all attempts to cure will be of no use. If this neglect has been long continued, the udders become inflamed, in which case bleeding and purging will be requisite as above directed for pokes and kicks. When the operation of the purge has ceased, saltpetre and fenugreek, as well as the liniment may be administered, once a day, as above recommended, till the milk returns to its former healthful state.

The regimen, in each of the latter two cases, should be of an emollient kind, such as malt and bran mashes, warm water, and gruel made of oat or Indian meal.

REVIEW OF THE DECEMBER NUMBER OF THE AGRICULTURIST.

Electro Culture.—Although this article is conclusive and satisfactory proof that whoever attempts to raise vegetables by lightning, must make up his mind to live on a most "thundering" light crop, as the error, like "God and Liberty," having once got upon the wires, will continue to make the circuit, and we shall for a long time continue to see accounts published of "the experiment." I hope hereafter that the "battery" will be confined to a couple of half pint tumblers, and the vegetable garden, a small flower pot, and with this apparatus, if experimenting gentlemen are disposed to raise a crop of water cresses for breakfast by light-

ning, their thunders will not be likely to shake the foundation of any horticultural society.

Adulteration of Food, No. 6—Sugar.—That the frauds in this article have been most shameful, I have no doubt. Several other articles besides those mentioned, have been used—one of which is corn meal. I believe ten per cent. of meal has been used by suiting the color of the meal to that of the sugar. But about the worst adulteration takes place in the sugar house. In many of the sugar works of the West Indies, I have often observed, (for I was some time engaged in the carrying trade as master of a vessel,) no effort is made to keep the sugar clean; but on the contrary, with some, the vegetable matter and dirt is purposely boiled in to make weight. And to give the sugar a nice white look, it is washed with a nasty mixture of rum and other stuff. Furthermore, I am sorry to say that there are some Louisiana plantations where the same course is followed; though generally speaking, the Louisiana sugar is far superior to the West-India, not only in point of cleanliness, but in strength. The planters of that state are beginning to make refined sugar direct from the cane juice, fully equal in point of quality to any refinery in the country. And sugar from those plantations is now becoming so cheap, that it is hardly worth while to buy the coarse qualities that are usually most adulterated.

Book Farming.—I like the spirit of this article. The fact is, it is time this tirade against "book farming," was treated with the contempt it deserves. Call things by their right names, is my motto. And therefore I go distinctly for calling those who are continually harping about book farming, just what they are—either knaves or fools.

Phosphate of Lime.—Just a fine comment upon the spirit of the preceding article. Although the former may get a hint from these few lines that would be of immense benefit to him, if he follows out the hint, yet forsooth, he must not do it, or else some ignorant jackass will throw up in his teeth that he is "book farming."

Approved Varieties of Fruit.—If persons generally would just take this list and set out an orchard of the fruits named, and "seek-no-further," they would have an assortment that ought to satisfy any reasonable human being, and it would be far better than this eternal running after every fruit they happen to see advertised with a new name.

Agriculture of the Chinese, No. 12—Tea.—So, it seems, that somebody else besides the Yankees are up to a "trick or two," in the adulterating line. Bah! That is the sort of broth we drink for tea, is it? Well, the best remedy that I know of is to drink water—pure water. But if we must drink tea, why not grow it ourselves. I have no doubt that it can be grown in the United States just as well as cotton, sugar, rice, and many other things that the world once used to go to the Indies for. I should like to see some articles in the Agriculturist upon growing the tea plant in America. [Dr. Junius Smith is now experimenting with the tea plant in South Carolina. See p. 381 of our seventh volume.]

Cultivation of the Common Locust Tree.—I have planted the seeds after they had been gathered so

long and become so old that they had grown grey, (or else I had,) and they grew trees and bore more seeds that grew more trees and multiplied amazingly. And I'll tell you how I made 'em grow. I poured boiling-hot ley on them, and when they got cold, I planted them in good rich earth. And I advise *everybody*, to plant locust seeds and trees; for, behold it is good so to do.

Rough Notes by the Way, No. 4.—This may be a good enough title, (for what's in a name?) but the true meaning title to the story is,—"The way the rough path of life is easily made smooth." And it is told, too, in that pleasing manner that our worthy old friend always tells his pleasant stories. May he long live to take notes and tell tales, without ever finding a rough note in the remaining short way of a long life. Here is a true specimen of a *book farmer* described—a young man at the age of 28, who finding it needful, perhaps, to change his business, voluntarily apprentices himself to the trade of a farmer, and by close application to work and study for one year, he becomes not only able to manage for himself, but capable of learning a lesson to his neighbors who had spent their lives in the trade. No doubt they were surprised to see the sandy worn-out hills of a Jersey farm rise again into fertility, under the operation of his workings of magic, the secret of which he found, not where truth is buried, in the bottom of a well, but in the bottom of a well-muddled pond.

The Striped Bug.—This is an excellent and cheap way to get rid of the striped bug. I wish we could get rid of the *striped pig* as easy.

Farmers should Write for Agricultural Journals.—So they would if it were not for that eternal ding-dong kept up by those whose heads are as empty of everything, but sound, as those articles that only make a noise when their clappers are going ding-dong, ding-dong. They are afraid of being ridiculed as book farmers. This is another of the important reasons why this tirade of ridicule should be overborne. We can do it if we try.

Sunflower-Seed Oil.—There is no doubt but the same principle, if not the same machine, which hulls buckwheat or rice, will answer the purpose of hulling sunflower seed, and that the product of oil would be largely increased, though not so much as Mr. Danforth has stated. The same machine, too, would answer to hull cotton seed, from which many thousand barrels of oil might be annually extracted that is now wasted—literally wasted, without even using it for manure, as may be seen in many places in the cotton region, as we are told. There is another thing, too, that I have no doubt of; several of the oil-growing plants might be cultivated as a crop in the region where Mr. D. lives, to a much greater profit than the "great staple" can be. And I am glad to see the right spirit moving—the spirit of inquiry. I cannot answer the question of what would be the cost of mill and press, or I would with great pleasure.

The School House.—Having never in youthful days been in so good a looking one as this, I dare not venture now. But the article is such an interesting one that I beg every reader to bear it in mind, and never rest until he obtains a school house in his own district, just as good, if not just

like it. Above all things don't forget the ventilation. Having myself so long depended upon the wind, I am a strong advocate for a fresh breeze.

Agricultural Botany, No. 2.—From the great respect and esteem that I have for Dr. Darlington, who I am proud to say is a personal friend of mine, I cannot pass this article carelessly by. He speaks of the excellence of corn bread of the south, where it is almost universally found upon all the breakfast tables, whether a slab or mahogany one, besides the hundred-and-one other ways in which this excellent grain is cooked. One reason why southern corn bread is so much better than northern is, the quality of the corn, but the grand secret is in grinding. Yankee millers still persist in spoiling corn meal by close grinding. As to sugar from corn stalks, no sane man would ever think of it while cane sugar is less than five cents per pound, as it is now, and from the constantly-increasing crops of Louisiana, will continue to be most probably for a long time.

Kentucky Blue Grass.—I am bound to believe so good authority as Dr. Darlington, that this grass, and that known in our region as "green grass" is identical, and yet it does appear to me that the shape of the leaves are not alike—or is there two green grasses? The Kentucky blue grass, also, "comes in" to every old Indian encampment from Detroit to Prairie du Chien.

Spearmint.—This plant like the blue and green grasses, is so confounded and mixed up with peppermint, that confound me if I can sort 'em out. Which is it that we Yankees use to make oil of, which said oil we use to scent oil of turpentine with, which we then sell as "oil of peppermint?"

Lobelia, or Indian Tobacco.—"This is an acrid plant, possessing emetic, cathartic, and narcotic properties"—stop, stop, Doctor, you are describing the real Virginia weed; and that you know it is sacrilege almost to speak irreverently of in this very enlightened age and day of refinement. Refinement in a tobacco chewer's mouth. Oh, bah!!

Black Birch.—As in case of the blue and green grass, I should like to know if *yellow* birch is black. Perhaps if I had lived in my school-boy days, where them same "virgate branches" grew, I should have found out that black birch was a "twig of another color." Seriously, I hope my friend, "a friend to farmers," will continue his selections for these pages, for it is a truth that the little, though very valuable pamphlet from which they are taken is scarcely known.

Cultivating the Strawberry.—I wish Mr. Longworth would give a statement of actual occurrences that have taken place at Cincinnati in this culture, which we could depend upon for correctness, and which would show well by the side of this statement.

Two-Horse Wagons.—The one that you sold my neighbor Smith last fall for \$90 is a most excellent wagon. But it is not so very good to haul hay upon, as one without springs. In driving over rough ground, the load has a tendency to spring off. One great complaint against the use of spring wagons for common use, is the additional height to lift the loading. Cannot this defect be remedied in a great measure? It strikes me that it can. I

think the springs might be placed on the sides of the box, leaving just room enough for the vibration, between the bottom of the bed and axle. [There is a method of hanging them behind the axletrees, which brings the body quite as low as if placed almost directly on them; but the plan is not quite so strong as that represented in the cut.] To prevent any unpleasantness from concussion down upon the axle, when heavy loaded, use gutta-percha stops.

Treatment of Rose Bushes.—If soapsuds were used instead of water to mix with the cow dung, it would be all the better. Soapsuds, by the by, and no matter how strong or dirty, is one of the best manures for grapevines ever used. It is good to put on roots or leaves.

An Attempt at Housekeeping.—I have known a great many of that same, within 50 years past, and, from the nature of the present style of fashionable education now in operation for American housekeepers, I guess there will be a great many more attempts in the next 50 years to come, and I don't believe that some of them will ever be anything else but attempts. And what is the worst of it, many a similar spoiled dinner, like the one here related, will produce spoiled tempers. In truth, those "latter-day saints" of mothers, do not do their duty toward American daughters who are destined to become wives to American farmers.

Anecdotes of Animals.—Really, boys, these two stories, of the mouse, and "Yellow Ned," from the prolific pen of our excellent friend, E. S., are worth a whole year's subscription to the *Agriculturist*. If you have not read them, or if you have forgotten them, do turn back and read again. They are both instructive and amusing.

Agricultural Chemistry, No. 8.—These articles, as they progress, seem to increase in value. At first, I did not view them with any great degree of interest, particularly for the boys; but really the present number is not only very interesting to them, but may be read with much profit by some of us who were boys a long time ago. How exceedingly plain the description of the several substances here named is given. I hope Mr. McKinstry will go on with a long catalogue in the same style. It is the most interesting "agricultural chemistry" that I have ever read.

REVIEWER.

PROFESSOR NORTON'S REMARKS ON THE ESTABLISHMENT OF AN AGRICULTURAL SCHOOL BY THE STATE OF NEW YORK.

At a discussion which took place at the State Rooms, in Albany, on the 4th of January, relative to that part of the late message of the Governor, recommending the establishment of an Agricultural School, Professor John P. Norton, of Yale College, rose in compliance with a request of the Chairman. He expressed his great satisfaction at seeing the interest evinced on this subject, by those who desire to advance the cause of agriculture in the state of New York. There is hope that when such a state makes a decided movement—whatever institution may be established under its auspices will answer public expectation.

Mere theory, he said, was not the true test of the usefulness of such an establishment. It must be on a liberal scale, or its good would be imperfectly

felt. Among all the European agricultural schools, and he had seen most of them, there were but two or three which were not on an exceedingly limited plan; even with them but few men, that could really be called men of science, were connected.

One of the principal points to be regarded, is, that the theoretical teacher be able also to impart practical instruction. The school should unite practice and theory—that the scholar, however enlisted in the theory, may bring it to the test of experience, and see whether it is consistent, or at variance, with the actual results produced. This is one of the strongest reasons why government should control such a school; since it could afford the necessary means to fully develop at once both theory and practice, in any department of agricultural science.

Professor N. would not wish chemistry brought forward too prominently in such an institution—but would place all the various forms of knowledge on an equal footing, having all so adjusted and so arranged, that we should not have, as is now too often the case, a long series of experiments, producing no decisive satisfactory results, for the reason that they are made in different regions, on different soils, in different climates, in accordance with no fixed rules, and with want of scientific knowledge. Such experiments are often worse than useless, leading but to confusion. He alluded to the different theories of distinguished authors, the true test as to the economical value of which had been, after all, the experiments of practical men. It was, for instance, at one time said, that the potato contained neither the substances necessary for the fattening of stock nor for the formation of muscle, but this had been found an error. Scientific men had made great mistakes, even Liebig, in reference to several points, and had done much harm through a lack of practical knowledge.

The union of the scientific and the practical, in such an institution, should be complete. The man at its head should be well versed in all the scientific discoveries of the day, competent to seize upon whatever new propositions presented themselves, and to subject them to the ordeal of experience. In that way the most decisive results would be obtained.

He hoped that in the establishment of this institution, a very prominent place would be given to such scientific investigations as would tend to a thorough examination of questions concerning which theoretical men were at issue. The want of these, and of the proper men to carry them out, are the reason for the failure of so many agricultural schools. Farmers would soon lose their confidence in any school which could not afford them reliable information on these matters. The state of New York, the leading state in the Union, should pursue a policy which would lead to the permanency of the undertakings that are commenced.

There is always to be a struggle with crude and imperfect notions. He had been astonished to hear last winter at one of the meetings held in the capitol, the assertion made—that in such an agricultural school as was then proposed, a scholar could be made a thorough analytical chemist by the study of some six weeks or two months. His experience in various laboratories, had taught him that

analytical chemistry was a study that could only be well pursued by years of laborious application—this was apparent from the very nature of the science. The analyses were made in such small quantities, that the utmost nicety was required, not merely of the chemist, but of the instruments which he used. Their mechanism must be as nearly perfect as possible, and he must have the skill to use them. The balances must be made so as to turn, even with the hundredth part of a grain—the most apparently trifling constituents of the thing analysed must be discovered—all these, and many other points not specified in any printed formula, must be attended to, or the work of analysis will not have been well performed.

He witnessed this, in seeing how difficult it was to impart to others the knowledge necessary to enable them to make an analysis; the labor of a year might be bestowed by a student before he would trust him to make an analysis of a soil out of his sight. Even with *many years* of experience puzzling questions constantly present themselves.

As some misconception might have arisen from his mention of the time necessary to make a good chemist, Professor N. wished to observe in few words, that while he wished to banish the idea that every farmer could do his own analysis, he considered that all farmers might, in a short time, become familiar with the *great principles* of chemistry as applied to agriculture. By means of lectures given in such a school, and by simple experiments shown there, he might learn what were the substances which composed his soil, his plants, his animals, his manures, &c. This knowledge would be of an eminently useful and practical character, would enable him to direct his efforts at improvement with far greater certainty than ever before, and also to draw much more light from the writings and experiments of scientific men.

There is this objection to the establishment of many small local schools, that it leads to a contrariety of results, and consequently the promulgation of just so many diverse theories—since from inadequate means, and ill-instructed teachers, the experiment would, in many cases, be inadequately and imperfectly made. The completeness of the results in a perfected and central state institution, would prevent error—they would prove themselves. Then smaller schools would spring up under its auspices and be guided by its light.

The first and leading idea of this central school should be, what is the general economy of agriculture, what system will best develop the resources of every department of farming. Its constant endeavor should be to devise a system that by its combined results would show in which way the greatest good to the land, the greatest profits out of it could be attained. Every department ought to exhibit what might be called “a model” of its kind. The farm should embrace a great variety of land, so that every mode of managing the crops might be illustrated—the buildings, implements, and stock should be the best adapted for the purposes designed.

The experimental department, Professor Norton said, should be arranged under these heads:—

First, a *Chemical Department*, devoted to such in-

vestigations and researches in chemistry as would lead to valuable practical results.

Second, a *Veterinary Department*, where the diseases of animals can find proper treatment, and where the qualities of various breeds could be ascertained.

The third *Department*—a portion of the farm, on which to test the various questions discussed in the school and elsewhere, by cultivation.

He thought it perhaps doubtful, whether all would agree in assigning to chemistry so prominent a place. He paid a passing, but earnest compliment to Professor Johnston, of Scotland, as the principal *practical* chemist of the day. The results of the laboratory published to the world—the details of the experiments made, would be of such a character that practical men could benefit by them. These suggestions would not be tested in one year only, but by reason of the adequate means used, the facts would be established by long experience before promulgation. One test would not be considered sufficient to determine the certainty of a theory, but successive results would be required—and nothing taken for granted until it was clearly demonstrated.

Such an institution would find—it must find an individual suitable to carry it on—to commence it, and to direct it after commenced, to produce the most important results.

RAT CATCHING.

At p. 182, of the seventh volume of the *Agriculturist*, also at p. 63, of the present volume, mention is made of enticing and destroying rats by means of a preparation containing the oil of anise and the oil of rhodium, &c.

As no definite directions are given for preparing and applying the mixture, you would oblige me, and probably many others, by inserting the *modus operandi* in your next number.

A PHILADELPHIA SUBSCRIBER.

In reply to the above, we would communicate to the public, and more especially to our discriminating subscriber, the following recipe, which was purchased by a friend, as a “secret,” from an old rat catcher:—

Take powdered assafœtida, 2 grains; essential oil of rhodium, 3 drachms; essential oil of lavender, 1 scruple; oil of anise, 1 drachm.

Let the assafœtida first be well triturated with the oil of anise; then add the oil of rhodium, continuing to rub the material well together with the pestle in the mortar, after which add the oil of lavender, and cork up the mixture in a close bottle until required for use.

The method of applying the compound, consists merely in smearing a tame rat with it, after mixing a few drops of it with a little flour or starch, or employing the paste thus formed as a bait for the trap. It is stated, that a tame white rat besmeared with it, let loose in a vault, has been known to be followed by half a dozen other rats, which appeared to be enamored by their albino decoy. A trap placed in a cellar, haunted by rats, and left there all night, was filled the next morning with these pests to the number of thirty, and was surrounded by a host of others, that actually could not enter from want of room!

NEW MANSION OF MR. CAPELL.

I HAVE just completed a dwelling house, which, to my own mind, combines neatness, convenience, and durability. All of the materials employed in its construction are of the best quality—the timber, cypress and yellow pine—plastered on the inside—a convenient staircase in the middle, and fine tin gutters with pipes at the eaves to conduct the water from the roof.

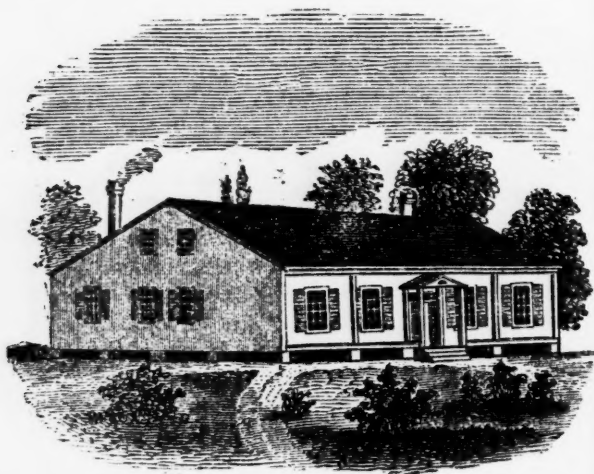


FIG. 27.

PERSPECTIVE VIEW FROM THE SOUTH WEST.

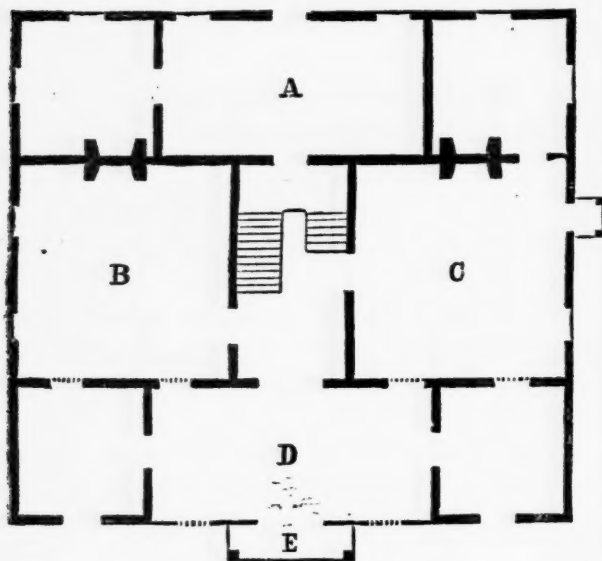


FIG. 28. GROUND PLAN.

Description.—The main body of the house, fig. 28, is nearly square, say 42 by 46 feet, with one portico, E, in front, $6\frac{1}{2}$ by $10\frac{1}{2}$ feet, and another on the south end, 6 by 8 feet.

A, denotes the dining room, 12 by 20 feet.

B, the parlor, 17 by 18 feet.

C, the family, or living room, 17 by 18 feet.

D, a gallery, $10\frac{1}{2}$ by $24\frac{1}{2}$ feet, which is between the front portico and the lobby, or hall, the latter being 10 feet wide and communicating with the parlor, living room, and dining room.

At each end of the dining room A, there is a fine bed room, 12 feet square.

At each end of the gallery D, is a small room, $10\frac{1}{2}$ by 12 feet.

The house is one story high, with an attic containing two fine large bed rooms with fireplaces to each. The cost of the whole, exclusive of the labor performed by my own negroes, was \$2,100.

E. J. CAPELL.

Pleasant Hill, Centreville, Miss., Dec. 13th, 1848.

EXPERIMENTS WITH GUANO.

I AM one of the pioneers in the use of guano in this section of the country, having used it for about five years. My first experiment was on an old worn-out sedge lot, on which I applied at the rate of 300 lbs. of Peruvian guano to the acre. The product was a fraction over 20 bushels of clean wheat per acre.

My second experiment was upon the same lot, with the addition of three acres adjoining. The quantity of guano applied was about 400 lbs. per acre, part Peruvian and the balance Patagonian. The product was 25 bushels of clean wheat per acre, exclusive of scrapings. In each of the above experiments, previous to sowing the wheat, I mixed about a peck of gypsum to every hundred pounds of guano.

My third experiment was also made with wheat on six acres of the same kind of land as the other two, which were plowed up directly after harvest and manured with 400 lbs. of Patagonian guano, mixed with two bushels of charcoal dust per acre, applied at the time of sowing. The wheat now looks fine, better than the years previous, but whatever the result may be, next harvest will tell.

It may be proper to state, that in my first experiment, owing to the previous season being wet, about one third of the seed sown did not come up; and in the second experiment at the time of seeding, the ground was somewhat like a mortar bed, and a considerable quantity of the wheat plants were winter-killed. The quantity of seed sowed in each case was two bushels per acre.

My fourth experiment was with potatoes, by spreading a handful of guano, mixed with plaster, to every one or two yards along the furrows after the tubers were dropped. The product was middling, size of the potatoes good, quality first rate, and no rotten ones.

I have also tried guano to Indian corn by applying it in the hill, but owing to the dryness of the season, I have not reaped that advantage I anticipated. In one instance, I sowed a small square broadcast, plowing in the seed, which resulted in from one third to one half more corn than when the guano was applied in the hill. The quantity of guano used was from 300 to 500 lbs. per acre.

I have also applied guano to my young fruit trees, as well as to almost every vegetable and flower on my grounds with marked success.

JACOB HEWES.

Leiperville, Pa., January, 1849.

A NATURAL BIRTH REGISTER.—When a native of Java has a child born, he immediately plants a tree, which, adding every year a circle of wood to its trunk, indicates the age of the tree, and therefore that of the child. The consequence is, the child regards the tree with reverence and affection as long as he lives.

THE STEAM ENGINE APPLIED TO PURPOSES OF AGRICULTURE.

WITHIN a few years, the steam engine has been applied in Great Britain to the purposes of agriculture with economy and marked success. It has been found very useful in threshing, winnowing, and grinding grain, crushing linseed, cutting chaff

and other fodder for stock, and will do sundry other things on the farm or plantation, such as grinding apples for cider, pressing cotton and hay, grinding sugar cane, sawing wood, pumping water, churning butter, &c., &c.

There are engines made, at present, in a portable form, with boilers attached, which can be transport-

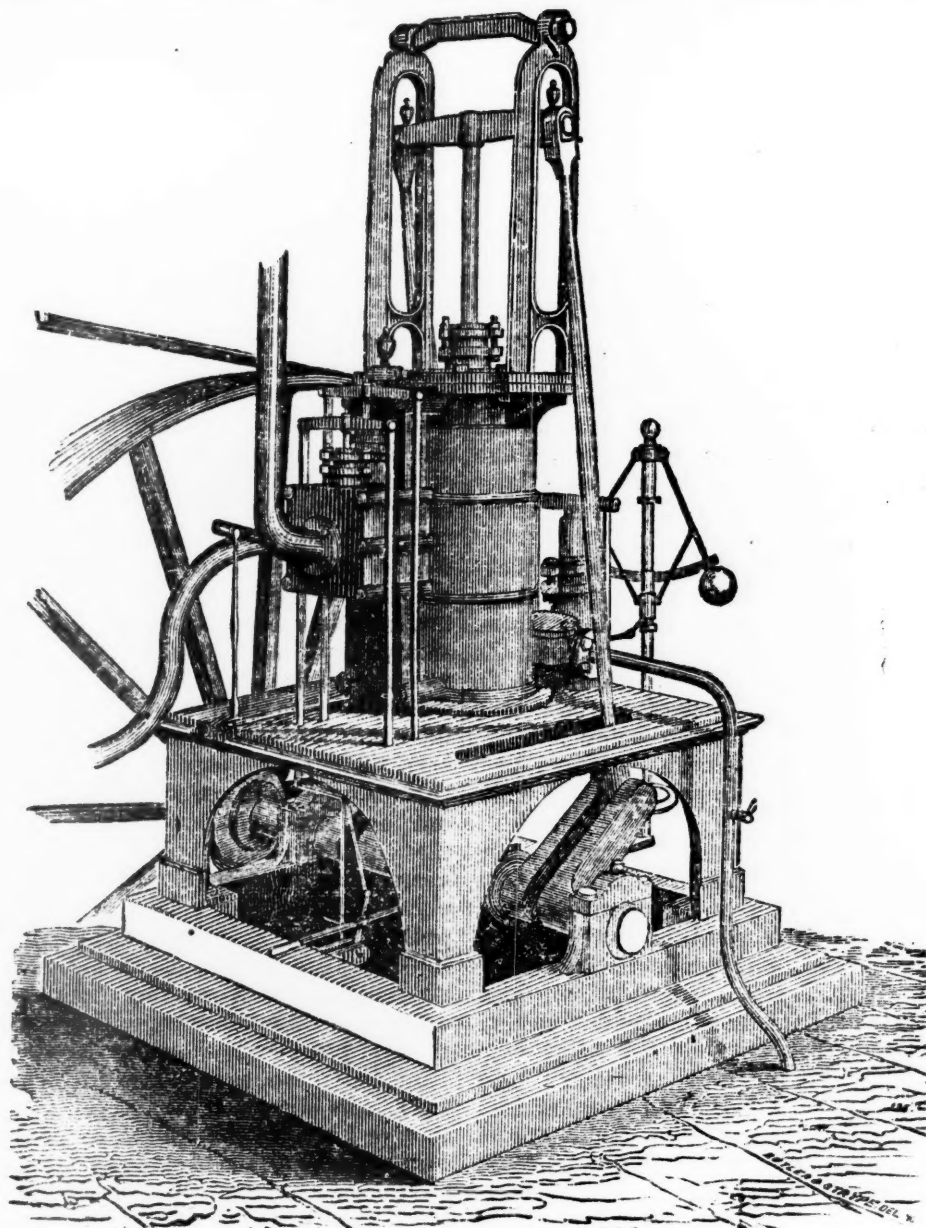


FIG. 26.—STEAM ENGINE.

ed from one farm to another, at a moderate expense, and if necessary, can be employed by night as well as by day. All things considered, an engine of this kind, cannot be looked upon otherwise than of great pecuniary advantage on a farm, as the expense for fuel and attendance of running one of six horse power, will not exceed 25 or 30 cents per hour.

A three horse-power engine of this description, with boiler, complete, can be had, on application, for \$500.

The cost of a ten horse-power engine, like that denoted by fig. 26, including boiler, complete, will not exceed \$2,000.

THE TWO SYSTEMS OF FARMING.—Under a low standard of agriculture, the object of the farmer is to collect the natural produce of the soil with the expenditure of as little money or labor as possible. But under a high standard, he does not grudge expense of labor nor of manure, in order to obtain a proportionate increase of produce; and he studies to obtain this by cultivating crops congenial to the soil, by growing them in such order that its natural powers shall be turned to the best advantage.

FACT IN FARMING.—In ordinary land, without manure, high tillage, and thorough pulverization of the soil, farming will give but poor returns.

AGRICULTURAL TOUR SOUTH AND WEST.—NO. 3.

I THINK in my last communication, I parted with my readers at Dr. Philips'. The day I left there, I had a conversation with Mr. Watson, a neighbor of the Doctor's, about the loss of stock on pea fields. Mr. W. has lost fourteen head of cattle this fall, (mostly fat heifers,) among which are two working oxen and one beeve.

These cattle were turned into the fields from the woods, while the peas were fresh and green, and in a day or two after, he was told that one of the herd was dead. He rode out directly to examine, and found two more dead, having dropped down suddenly, and without showing any symptoms of disease; and on opening them while still warm, he found no signs of inflammation. They were all very fat. The only signs of being affected by this mysterious cause of death, as he subsequently observed, was in the discharge of dung, which had a dark grumous appearance, more like blue clay mixed with dirty water and very soft. On being turned out into the woods again, they became healthy until some weeks after, when on being admitted to the field were again attacked, and several died. The same result followed the same course at a later period, when the peavines had all been killed by frost.

Hogs, that are affected by eating peas, show sickness before dying and on being opened present the same appearance as when dying of kidney worm, and a thick, glutinous matter stops the neck of the bladder. Mr. Watson cures hogs, when seen in time, by feeding large quantities of warm, greasy slop, very salt. To prevent their being affected, they should be fed liberally with corn, and well salted, both before turning into pea fields, and while they are in.

One of the good results of making good channels of communication between town and country, is seen along the Vicksburg and Jackson Railroad. The cutting and sending wood to the river for 15 or 20 miles back is found more profitable than a cotton crop. Dr. E. H. Bryon, at whose place I spent a night in Havre county, has found this particularly so. And as the banks of the Mississippi are becoming rapidly denuded of their forest growth, the time is near when wood from the interior lands will have to be sent in to supply the almost inconceivable enormous consumption by steamboats, and sugar making. Wood has been already profitably sent in flat boats from Green River, Kentucky, to New Orleans.

Profitable Culture of Havana Tobacco in Mississippi.—Mr. R. Y. Rogers, who lives among those interminable and almost inaccessible hills back of Vicksburg, raised on one eighth of an acre, the last season, a crop of tobacco, which, although only once cut, has brought him \$121, cash, leaving nine hundred cigars on hand and tobacco enough, except wrappers, to make three thousand more. The cigars readily bring him \$20 a thousand. Mr. R. is a small farmer and market gardener, and a gentleman of great enterprise, whose income from the amount invested, I presume is a greater percentage than any cotton planter in the state. In company with friend Rogers, we took saddle horses and rode over to Dr. George Smith's plantation, as the inconceivable unevenness of the surface, pre-

vented our travelling in a carriage. It would utterly surprise any one from the most hilly region of New England, to see the steep side hills here in cultivation. The plowing is done on the "level system," and the crop often has to be carried down by hand, as no cart can be driven up and down or round about, except as is sometimes done by attaching a rope to a stake on top of the hill, which prevents the cart from upsetting as it circles round, keeping the rope taught. We found on Dr. Smith's place a sample of economy often seen in other places besides Mississippi. He had about one hundred hogs, which, by dogs and traps, had been caught from the woods and shut up in square rail pens, eight to fifteen in a pen, to be fattened. I do not think that when killed they will average 100 lbs. each. The corn is shelled and boiled, and fed in troughs. The bottoms of the pens are rails—no shelter nor bed—wood, water, and corn, hauled half a mile. Now this corn, is worth 40 to 50 cts. a bushel in Vicksburg, and six miles to haul. The pork will be worth from 3 to 5 cts. Query—which would be the best economy, to shoot the hogs and sell the corn and buy pork, or feed it, with the hope of making it of such hogs—many of them now being two years old? The Doctor's corn is of a superior quality, and made this year a good crop. Not so with cotton.

I left Vicksburg, November 28th, on my way towards New Orleans, by land. A beautiful warm sunny day, and although the paddles yesterday morning showed a good covering of ice, the cold was not severe enough to dim the blushing beauties of ten thousand roses in the gardens by the wayside. The road to-day, lying over the most uneven surface ever cultivated, passed much land "worn out" and abandoned to the washings of the rains that fills the whole surface of an old field, in a few years, with impassable gullies. On the road side, a few miles before reaching Port Gibson, there is a gully big enough to bury a small town. These hills are all composed of an alluvial deposit, with nothing to prevent washing. As soon as the roots are decayed they dissolve with greater rapidity than though composed of salt. Near Port Gibson, I passed a Cherokee rose hedge which I saw planted, four years since. It is not yet a sufficient fence, though I believe that four years does often produce that result.

November 30th, I shall have reason to remember, as I came very near losing myself, horses, and carriage, in one of those remarkable quicksand creeks of this country. This one being well known to many an unfortunate traveller on the "old Kentucky trace," by the name of Cole's Creek. I am precluded from giving a full account, but suffice it to say that I came out on the same side that I went in, and by help of negroes and oxen, got the carriage out, without any serious damage, though I had a very unpleasant job of two or three days in getting dry and waiting for a fall of water, &c. Fortunately, I met with kind female sympathy in the wife of a Mr. Mackey, by whose assistance I got my wardrobe again in wearing order. The only way of crossing these quicksands with horses, after a time of high water, is to drive cattle across to settle the sand. Horses, when they get in, often become frightened and getting their feet fast, will

lay down and make no exertions to get out. This kind of stream abounds in this country, and the people say, they cannot be bridged. I think Yankee enterprise would try. Though I will acknowledge that the extreme unstable nature of the banks would make it difficult.

Visit to Mr. Affleck.—It is entirely superfluous to say that I met with a most gratifying reception from this old acquaintance of yours and mine, as well as from his most amiable wife. There are no brighter spots in life, than these meetings of old friends. I found Mr. A. as full of despondency at the result of the last cotton crop, as I have a hundred others within a few days, who complain with good reason of short crops and low prices. But as hope is the "sheet anchor of the soul," I found him full of that, upon the subject of a new business which he is now about entering upon. His little place of 47 acres, at Washington, Mississippi, he is now engaged in laying down into a nursery of fruits, shrubs, flowers, and plants—both out doors, in hot houses, and forcing beds, with the intention of supplying that region, as well as the New-Orleans market with such articles. He has an accomplished gardener, Mr. Drummond, from Scotland, and brother of him who gave the name to *Phlox drummondii*; and he has now on the way from Mr. Rivers, of London, a great assortment of bulbs and plants, as well as all that he can obtain in this country. I hope his success may be commensurate with his industry. Mr. A. can exhibit some of the advantages of underdraining in his garden and nursery grounds. This he is doing with joints of large reed canes. He thinks that they will last many years, and when decayed, that the hole in the clay will still afford drainage for many more years. At any rate, it is a cheap experiment. He has a Cherokee-rose hedge, now three years old, that will, in another year, be a good fence.

Bermuda Grass.—This grass is much objected to in many places, on account of its tenacity of life, but Mr. A. assures me that he finds no difficulty in killing or smothering it down by crops of the cow pea. This easily-managed and most valuable grass cannot be the same kind that is so much anathematized in Georgia.

Here, for the first time, I saw the "cholera among the turkeys,"—a disease that is at least as unaccountable as that of the same name in the human system; and which has slain its thousands among that branch of the poultry-yard family, within a few months, in this region. They drop from the roost frequently, and usually quite fat. The most beautiful tenants of Mrs. Affleck's yard, and in fact that I ever saw, was a couple of domesticated wood ducks. China and African geese, thrive here as though it was their native home. One of the great pests of the poultry yard and garden are the rats, which are only kept in check by a number of excellent terriers. Yet we see a hundred curs and hounds in the country to one of these valuable little dogs.

It is a wonder where wood is scarce and dear as it is here, and where the China tree grows so rapidly, and makes such good fuel, that plantations are not made for that purpose, upon some of the old fields hereabouts, that are unfit for any thing else.

Mrs. Isaac Dunbar, Mrs. A's mother, and who manages the "home place," has some of the finest hedges of *Louri-mundi*, that I have seen; and although they are not good fence, they are highly ornamental. The plants are easily grown from seed. She is now burning vast quantities of fuel cut from the China trees, as well as locust, in the yard. On the night of December 5th, the weather was so warm, that sleeping under a sheet only, and with doors and windows open, was uncomfortable. Let readers compare notes upon this.

The roads in the vicinity of Natchez are in just such a condition as may be imagined by those who have seen the hundreds of wagon loads of cotton constantly drawn over a loose, soft soil by four or five yoke of oxen to each, during a six-weeks' "rainy spell." And particularly when it is taken into account that labor upon roads, is almost unknown. It is one of the most common things, after toiling up a very steep hill, that you find the apex so sharp that the forward wheels of a wagon begin to descend the other side before the hind ones are up. In some countries, such ridges would be dug down. I have travelled many miles of road in different places in Mississippi, worn down into ditches from four to twenty feet deep, and barely wide enough for two wagons to pass; and these continually undergoing the gullying operation, that sometimes render travelling anything but safe or pleasant, to say nothing of the bridgeless streams before mentioned. The Scuppernong grape is grown successfully in the vicinity of Natchez.

On the road between Natchez and Woodville, there are many miles of Cherokee-rose hedge, often spreading twenty feet or more wide and as many high. It is an objection to this plant, that it is very difficult to keep it within any reasonable bounds, as a hedge. Careless planting and tending, too, often shows gaps. It is also an immense harbor for rats and rabbits, and sometimes it gets so full of dead wood, as not only to be unsightly but in danger of taking fire and destroying a line of fence in a few hours. On the other hand, if well tended, it makes a handsome hedge, being evergreen, and in spring it is covered with a profusion of single white roses, that give it a most beautiful appearance, specimens of which were frequently to be seen to-day, (December 6th,) below Natchez.

In travelling along any public road in this country, a stranger might wonder where the inhabitants were, as he may not see a house for many miles. As for instance, just at dusk on the evening I left Natchez, I opened a gate that led from the road apparently into a cotton field or a woodland pasture, and pursuing the road over a little run, up a hill, through the grove and another gate, about half or three fourths of a mile, there opens upon the view a large fine mansion, and all the appurtenances, of a rich and flourishing cotton plantation. This is the residence of Dr. Metcalf, a very estimable and enterprising gentleman, formerly from Kentucky. The Doctor, not being contented with a very good house, is now exercising his fine taste and love of building, in a very large addition to his residence, which is one of the best built houses that I have seen in the state—a plan and description of which I hope to give hereafter. Dr. M. thinks the use of cistern water far more healthy

than that of springs or wells, though he has one 50 feet deep of clear and cool, but hard water.

Bitter coco is one of the greatest pests that the planters have to contend with, several of whom, in this vicinity, having abandoned the culture of cotton on account of the spread of this grass, which defies the art of men to exterminate. Nothing but freezing will kill it. Dr. M. penned and fattened a lot of hogs upon a patch of it, and they rooted down three or four feet after the nuts, which are about the size of large beans, black color, and strung upon a small tough black root, a dozen in a string; and he fully believed that the hogs had destroyed it; but lo! in the spring it started up thicker and faster than ever. It grows a small single blade of pale green grass, never growing high, is good for pasture, particularly for sheep, but is killed by the slightest frost. The smallest fibre of roots vegetate, and unless actually consumed, fire does not seem to destroy its vitality. It has been known to grow abundantly from ashes, taken from a kitchen fire where it had been thrown to destroy it! And I have myself seen it growing out of the lime mortar in the top of a sugar-house chimney, after the chimney had been used to boil a crop of sugar; and those who know anything of the intense fires used, can easily imagine that the top of a chimney is anything but a cool place!

Doctor Metcalf and his neighbor Dr. Mercer have some of the best stock in this part of the state. Though I am sorry to say that there is not much encouragement among the mass of Mississippians, for enterprising public-spirited men like these, to expend money in introducing good stock, except for their own use. I saw in Dr. Metcalf's garden, a beautiful and efficient hedge of the Florida thorn, which I like better than the Cherokee rose, or the Osage orange, a specimen of which I have seen on Dr. Mercer's place. That plant, in this climate, grows naturally to a tree, and in a hedge-row does not afford sufficient thorns on the lower part of the stems. Being deciduous, too, it is less beautiful in winter than the *Lourimundi*, if planted for an ornamental hedge.

On the day I left Dr. Metcalf's, I crossed the Homochitto River, by a very good ferry, where was once a bridge, and in fact is now, over a part of the swamp, which is traversed by a causeway some two miles long, from four to ten feet high, which will go to show some of the difficulties of bridging streams here, and an as item of excuse for the great neglect of the people to keep the roads passable. Though the excuse is by no means sufficient. For a few miles further on, I encountered another stream, called Buffalo Creek, where a new bridge was building, which I suppose was sufficient excuse for having no ferry—the boat formerly here having been sunk months ago. From the late, almost incessant rains, the creek was sending an angry flood of muddy water fifteen or eighteen feet deep, to give its aid toward extending the lands of Louisiana across the gulf of Mexico, and presenting to several travellers on the other side, almost as insurmountable a barrier as would the gulf itself. I found at the place a small "dug out," and several negroes, to whom I gave a couple of dollars, (of course they wanted five,) to assist me in taking my carriage apart and carrying it over a piece at a

time; and baggage, harness, and self in same way, and then swimming the horses over. Streams are very numerous and bridges few, and ferries almost always exorbitant in charges and often very badly kept. I have often paid 50 cents to \$1 for toll over streams not twice as wide as some of the cotton teams are long. Tavern bills, too, are outrageously high, and the fare outrageously low; but of the hospitality of planters, and kindness with which I have been treated, without a single exception, I cannot speak high enough. Such a reception as I met with upon a late arrival, at the house of Mr Horatio Smith, near Woodville, is almost sufficient to make one forget such little items as the troublesome passage of Buffalo Creek.

Of all the numerous and curious gullies I have yet seen in this curious country, one passed to-day, (December 8th,) north of Woodville, is perhaps the most so. The road for more than half a mile traverses a mere ridge, rising out of a gulf or succession of gulfs on each side, near a hundred feet deep, in an earth of a reddish color, and much of it the tint of the peach blossom. Mr. Smith tells me that when this ridge tumbles down, as in time it surely will, that the old plantation adjoining is so full of gullies, that there will be no place for a road, without going several miles round. Mr. Smith, says, *never plow nor dig the ground in the contemplated hedge row for Cherokee-rose cuttings*. Scrape the surface clean, draw a line and mark the row, and then take a sharp pin, either wood or iron, the latter the best, and drive down six or eight inches, as thick as required for the plants, and drop the cuttings in these holes and hammer the earth around till it closes tight upon the stock. Planted in this way, not one in a hundred will fail, no matter how hard the ground—and it is not one half the labor as the mode in which they are usually planted. Mr. Smith gives as one of the reasons why pork is not made here to a greater extent, in these low-price times, the difficulty of having sufficiently cool weather at killing time, to save the meat. He has known hogs turned out again, after having been fattened, on account of the weather continuing so warm through the whole winter, that it could not be cured.

Although the town of Woodville and vicinity contain many excellent people, the place has got an unenviable notoriety; and "the oak" is known more widely as a scene of bloodshed than that portion of the inhabitants who belong to the peace establishment. If alcohol were utterly banished from the place, then would the town soon wear an improving look, more pleasing to the stranger.

SOLON ROBINSON.

Woodville, Miss., Dec. 8th, 1848.

HOW TO RENDER CLOTH, SILK, &C., WATER PROOF.—Take one pound, each, of common alum, (sulphate of alumina,) and sugar of lead, (acetate of lead,) and dissolve them in six quarts of boiling water, well mixed by stirring. When cold, the top portion of the mixture should be poured off for use, as the sediment consists of sulphates of lead, potash, &c. Any article of dress, no matter how slight the fabric, if well saturated with this liquid, and allowed to dry slowly, will bear the action of boiling water, and not permit it to pass through it

COTTON MANUFACTURES—MARKET WAGONS.

If you could enlist the aid of some one who can give all the minutiae, relating to a cotton factory, to do so, I am very well satisfied that you would greatly please many of your southern and western readers. There is a growing interest in the cause of manufacturing, and many desire to know from no other reason than acquiring information.

Take, for instance, a mill of ten thousand spindles, and give the size of the requisite building, number and size of rooms, cost of spindles, looms, carding and dressing machines, &c., &c. The object is, of course, to work to the very best advantage—that all looms may have constant employment, and not have to wait for thread, dressing, nor warping, so that one may not gain upon the other, and that there may be enough house room, and none to waste. How many yards should be turned off per week? Average wages for weavers, spinners, reelers, &c., &c.? Amount of stock required? For how many months has the stock to be bought for? Or in other words, what amount of money is required to keep the mill in operation? What is the best power, water or steam, where wood or coal is plenty and convenient? Cost of building? Wear and tear of machinery? Net profits, &c.

This is asking a great deal of you and your friends, as it will require several articles. I sincerely believe, if done properly, such information would be greatly prized.

That beautiful cut of a two-horse market wagon, in the December number of the *Agriculturist*, fills my eye so completely, that I would give as much to see the real thing as I would to see that "divine Fanny." I have thought it over until I hatched up a scheme to get one forthwith.

M. W. PHILIPS.

*Edward's Depot, Miss. }
January, 23d, 1849. }*

WE shall be pleased to receive, for the use of several friends who are making the inquiries at the south, answers to the above, condensed from reliable books, pamphlets, congressional reports, tables, statistics, &c., as any one at the north can give.

SUNDRY INQUIRIES BY A VIRGINIA FARMER.

My health compelling me to retire from public life, I have determined upon turning my attention to the cultivation and improvement of the soil. You will, therefore, confer a great favor upon me, as well as upon others of your subscribers, who have lately embarked in agricultural pursuits, by making known through the medium of your journal what information you possess concerning the following subjects to which my thoughts have been particularly directed:—

1. One subject upon which I desire information is, what is called Jauffret's mode of making manures, as detailed by Hon. H. L. Ellsworth, in his Patent-Office report. If it is what it is represented to be, it appears to me that I could soon enrich, at a moderate expense, a large tract of poor land, as we have a vast quantity of evergreens growing in this vicinity. (a)

2. Another point to which my inquiries have been directed is the soaking or steeping of seeds

in chemical solutions, with the view of accelerating their germination. It is stated that the application of these solutions, to grain and Indian corn are particularly serviceable in protecting the field from birds, insects, &c., as well as in augmenting the productiveness of the crop. Any one, or all such solutions as can safely, beneficially, and economically be employed, it is highly desirable should be made known, and those pointed out, which have proved either unserviceable or injurious in their effects. (b)

3. What do you think of applying liquid manure to young crops of wheat, oats, &c.? (c)

4. I see it recommended to cover wheat in the autumn or winter and oats in the spring, with straw, pine leaves, &c. Will this pay for the labor or expense? (d)

5. It is also asserted that corn stalks form the best manure for Indian corn, which, I presume, is based upon similar principles as the trimmings of the vine are the best fertilizer for vineyards. Is this assertion true, or is it mere theory? (e)

6. How would it answer to graft the peach upon a mountain-plum stock which is a hardy tree and about the size of that of the peach? (f)

Will it do to graft the choice varieties of the European grape upon our common native grape-stocks, which are so hardy and grow so vigorously in most parts of this county? (g)

E. R.

*Drummond Town, Accomack Co., Va., }
January 4th, 1849. }*

(a) The manure, made after the methods of Messrs. Baer and Gouliat, Bommer, and Jauffret, undoubtedly, possess excellent qualities, and where the requisite materials of which it is composed can economically be procured, we think it may be manufactured with some advantage; yet, it still remains to be proved, whether guano, bonedust, or a compost made in the barnyard with swamp or pond muck, straw, leaves, charcoal, plaster, &c. cannot be more profitably applied.

(b) It is a mistaken idea, that, by soaking or steeping seeds in certain solutions, the vigor and fecundity of the future plants will be promoted. For, all that is necessary to produce germination is, to bring the seeds in contact with a due proportion of water, oxygen gas, and a requisite degree of warmth.

No liquid, but water at common temperatures, will pass through the integuments, or outer covering, of a seed before the process of germination has commenced; and then this power to exclude other liquids ceases altogether; but the first organs of the plant, (the radicle and plumule,) starting into activity are so delicate, that the weakest mineral solutions are too acrid and offensive for them, with the exception of those which promote the decomposition of water, and consequently a more abundant evolution of oxygen gas. So utterly incapable are the infant roots of imbibing such solutions, that, at first, they are absolutely dependent for their existence upon the seed leaves, and if these are removed, or destroyed, the plant makes no further advance or perishes outright. Therefore, let it be a warning to those who employ steeps of this kind, with the hope of promoting the vigor of future plants, that they must keep the seeds in the solu-

tion but a very few hours; for, in two days, if the temperature be 60° F., or more, putrefaction commences, and germination is weakened or entirely destroyed.

M. Vogel, of Munich, has published an account of an extended course of experiments on this subject; and they fully confirm the opinion that *salts, innoxious when the plant is of a robust and advanced growth, are fatal to it at the time of germination.*

When healthy seeds are moistened with water and exposed in a suitable temperature to atmospheric air, they absorb the oxygen only; and hence they will frequently germinate if soaked in an aqueous solution of chlorine—a gas that has the power of attracting hydrogen from water, and others of its compounds, and thereby releasing the oxygen, which is then absorbed by the seeds, and their germinating process increased. This fact has been proved by Baron Humboldt and others, as in the case of cress seeds, (pepper grass,) which, under ordinary circumstances, require several days to complete the process, but on the application of oxygenated muriatic acid gas, they were found to germinate in the period of three to six hours!

The most eligible mode, perhaps, of applying the chlorine is, to mix a table-spoonful of muriatic acid with about the same quantity of black oxide of manganese and half a pint of water. After allowing the mixture to remain two or three hours, the seed is to be immersed in the liquid for two or three hours more, and then sown.

Another very safe and economical steep for garden and other seeds, consists of a solution of one fourth of an ounce of chloride of lime to one gallon of water, in which the seeds should be allowed to soak for four hours, and then be sown the ordinary way.

Manuring seeds by steeping them in a solution of guano and water, and rolling them in mixtures of blood and lime, &c., has within a few years been practised with some success; at all events, it is thought to destroy rust and prevent the depredation of insects and birds.

(c) Liquid manures, diluted to the proper degree of strength, may be applied beneficially to all kinds of crops, particularly to the squash and cucumber tribes; it is very doubtful, however, at the present prices of land and labor in the United States, whether they can be economically employed in manuring wheat, Indian corn, and other field crops, from the cost of their preparation, application, &c.

(d) The operation of covering wheat and other young plants with straw, pine leaves, or other fibrous matter is known at present under the name of "Gurneyism," the benefits and description of which may be found at p. 203, of our fifth volume. Thus far, this system has not been much adopted in this country, being generally regarded as a visionary theory.

(e) It is now generally conceded, that the roots, stalks, straw, leaves, seeds, &c., of plants, or the ashes of the same, (those of Indian corn of course included,) when restored to the soil in which they have been grown, will tend most essentially to the production of the same or other similar crops.

(f) As a general rule, all trees, shrubs, and plants may be grafted on nearly kindred stocks;

that is, those belonging to the same natural family, having sap vessels similar and of appropriate calibre, their proper sap and juices similar, and flowing at the same periods of the year. Thus, some species may be grafted, not only on every other species of the same genus, but on every other species belonging to the same natural family; as, for instance, the common hawthorn may be united with any of its congeners, as well as with the quince, the pear, the plum, and the mountain ash. Again, other species, that will not unite by grafting to all the species of their own genus, such as the common pear, which will not readily graft on the apple, will yet unite with the quince, the medlar, the thorn, and the mountain ash. The scions of some pears, however, can hardly be made to unite with a quince stock; but if they be grafted upon a young pear shoot, and afterwards inserted in quince stocks, they grow as freely as when inserted in the stocks of pears. The European larch will unite with the Scottish fir, and the Norway spruce with the Himalayan spruce fir; but oaks, in general, must be grafted on stocks of their own or nearly allied species. Another exception to the above-named rule is, that plants having milky sap will not unite with such as have watery sap; and, indeed, will not unite with other plants at all. Hence the Norway maple cannot be grafted on any other species of the genus.

As the peach succeeds more readily by *budding* than by grafts, and is strengthened by being worked on more robust stocks, we think the suggestion made by our correspondent a good one, and recommend that the experiment be tried of budding that fruit upon small thrifty stocks of the mountain plum.

(g) In the northern parts of the United States, the European vine has been grafted on Isabella stocks, and grew most luxuriantly until the leaves were killed by frost; but the wood of the young shoots did not sufficiently mature to withstand our winter's cold. At present, we know of no reason why the experiment would not succeed in sheltered situations in the middle states, as well as in localities further south.

FACTS IN FARMING, No. 3.

Feeding Milch Cows in Winter.—On the 25th of December, 1847, I commenced an experiment with eight cows, dividing them into two lots, four in each, and weighed the milk of each lot for six days. Lot No. 1. averaged 18 lbs. of milk to each cow per day, and Lot No. 2. 17 lbs. each.

On the 31st of December, of the same year, I commenced feeding Lot No. 1. with four quarts of dry Indian meal to each cow per day, for six days, which resulted in no change as to the quantity of milk. I then increased their feed to eight quarts of Indian meal per day, for six days more, at the end of which, the average yield of each cow was only 16 lbs. of milk. Lot No. 2. were fed at the same time as Lot No. 1. with the same quantities of scalded Indian meal, made into a slop, which ended in the same result.

Feeling convinced that Indian corn would not pay for the production of milk, I commenced feeding Lot No. 1. with half a bushel of ruta-bagas per day to each cow. In two days, the four cows in

creased their milk 10 lbs.; in three days 16 lbs., [20 lbs. each?] which latter quantity they maintained during the next twelve days following. Lot No. 2. were fed, during this time, with half a bushel of sugar beets per day to each cow, which terminated with the same result as Lot No. 1.

I then gave each cow of Lot No. 1. four quarts of ground buckwheat per day, made into a slop, which resulted in the same manner as when fed with the ruta-bagas. In the mean time, the cows of Lot No. 2. were fed with eight quarts of wheat bran per day, but without change as to the produce of their milk.

During the time the above-described experiments were performing, the cows had as much good hay as they would eat, with free access to water during the day, and were put up in a warm stable at night.

Corn Stalks for Winter Fodder.—On the 15th of June, I planted an acre of Indian corn in drills, 18 inches apart. On the 1st of September following, I cut it up with a reaping hook, let it cure for three days in the swath, then bound it in small sheaves and shocked, or stooked it up, putting a band round the tops of the shocks, leaving the bottoms spread out for the admission of air, to prevent moldiness, and about a month after, collected them into stacks near the barn. The produce of this acre kept thirty cows, for twenty days, from the 1st to the 20th of January.

Value of Root Crops.—For the last three years, I have turned my attention to raising parsnips, ruta-bagas, and the sugar beet as a field crop. The parsnip should be planted as early in April as the ground will admit. It has no enemy that will seriously injure it, yields well, (500 bushels per acre,) and for wintering hogs, is worth twice as much as the ruta-baga or sugar beet.

The ruta-baga, with me, has become an uncertain crop on account of the depredation of the turnip flea. The sugar beet is a productive root and will pay well for persons engaged in the production of winter milk; but under other circumstances, I doubt the economy of entering largely into its cultivation. If fattening cattle or hogs be the object, Indian corn will afford more feed from a given quantity of ground, provided it is as richly manured.

D.

Orange County, N. Y., January 10th, 1849.

REMARKS ON TOP-DRESSING.

THE waste caused by the washings by rains and melting snows, in my opinion, is the only objection to putting manure on the surface of the soil. In all other respects, I think it decidedly preferable to top-dress, particularly grass lands. If this cannot be done in the winter, I prefer to haul the manure on in the summer and spread it as soon after the hay is off the ground as possible. At that season, the rains are not so heavy as to cause much surface water; but at each shower, the soluble parts of the manure dissolve, wash down, and act immediately on the roots of the plants, causing them to continue their growth, until checked by frost. Should there be an excess of this liquid manure, it will descend lower into the earth, at every succeeding shower, and when once deposited there, will never ascend. [We cannot concur in this opinion. Manures may

be wasted by evaporating in the air, as well as by descending too deep into the earth.—Eds.] On very porous soils, however, it is often lost below. I have known gravelly land, where rotten manure has been plowed in before the commencement of the fall rains, and much of its strength washed out of the reach of the roots of most kinds of grain, that could not be brought up again without very deep plowing, or by planting, or sowing such kinds of vegetables as possess deep-searching roots.

I strongly advocate top-dressing for winter grain, when the snow or frost will admit of putting it on. If the ground is sufficiently hard to bear horses and their loads, no harm will be done, either to the land or team, in the absence of snow. I have seen this experiment tried, in many instances, with great success on stiff clay soils.

I have tried top-dressing on clay meadows, in one instance, by applying several loads of manure to the acre, and in another case double this quantity, and in a third instance treble the amount. The former was exhausted the first year—the next produced a good crop the second year, but was exhausted at the end of the season—but in the latter case, the crops were equally good for five years! This experiment convinced me *practically* that there was no loss by evaporation, and encouraged me to hold the position I now advance.

W. H. SOTHAM.

Black Rock, N. Y., Jan. 10th, 1849.

QUERIES ANSWERED RELATIVE TO WIRE FENCES.

SINCE the publication of Mr. Peters' article on wire fences in our January number, numerous inquiries have been made relative to the size, weight, and cost of wire, where it may be had, &c., &c. For the benefit of those who are interested in this subject, we have taken special pains to construct the following table, which is based on reliable facts, obtained from several importers and wire dealers of this city.

Class of wire.	Diameter in hundredths of an inch.	Weight per lineal rod.	Weight per lineal mile.	Retail prices per pound.
No. 1	0.32	4 lbs. 2 oz.	1321 lbs.	\$0.09 cts.
2	0.30	3 " 10 "	1166 "	0.09 "
3	0.27	2 " 15 "	944 "	0.09 "
4	0.25	2 " 8 "	809 "	0.09 "
5	0.24	2 " 5 "	746 "	0.09 "
6	0.22	1 " 15 "	627 "	0.09 "
7	0.20	1 " 9 "	518 "	0.10 "
8	0.18	1 " 4 "	419 "	0.10 "
9	0.16	1 " 0 "	331 "	0.10 "
10	0.15	0 " 14 "	291 "	0.11 "
11	0.13	0 " 10 "	219 "	0.11 "
12	0.12	0 " 9 "	186 "	0.11½ "
13	0.10	0 " 6 "	129 "	0.12½ "

If wanted in large quantities, 25 per cent. would be deducted from the prices above. There is a great difference in the quality of wire and those unaccustomed to its use are liable to have an inferior article imposed upon them. It is better that the wire be galvanized or annealed, as the fences will endure for 15 to 20 years without injury from the weather. For galvanizing the wire or coating it with tin, the cost will be only 2½ cents per pound in addition to the usual prices. See advertisement at p. 104 of the present number.

Ladies' Department.

POTATO STARCH.

It may not so generally be known as it should be, that starch made from the common potato furnishes an excellent substitute for arrow root, as a wholesome, nutritious food for children. It also makes an equally good, cheap pudding for their fathers and mothers. For, as it does not possess the medicinal properties of arrow root, it is much to be preferred as an article of daily food, except for children who are subject to diarrhœa, or summer complaint.

The process of making this kind of starch is so exceedingly simple, and the time required is so short, as to put it in the power of every one having the means at hand. All you have to do is, to grate any given quantity of well-washed potatoes into a tub of clean cold water; let it settle for a few minutes, and then pour off the foul water from the top; put the residue into a coarse hair sieve; plunge it into another tub of clean cold water and wash the starch through the meshes of the sieve, leaving the grated potato in the sieve, to be thrown away. Let the water settle again; pour it off, and wash the starch a third time. This last water will come off pure, which should be poured off; take out the starch after scraping off any remains of potato gratings that may be on the top; put it on dishes to dry, and it will immediately be fit for use.

When wanted for use, the starch need only be mixed with a very small quantity of cold water, and then stirred into boiling water, or milk, without boiling. The article makes a stiff and beautiful starch for clearing thin muslins, and is much less troublesome than that made of wheat. E. S.

FATTENING POULTRY.

I READ with much pleasure your very sensible remarks on the cheap method of fattening poultry, published in the January number, and take the liberty of saying that I concur fully in the opinions therein expressed, having more than once had occasion to notice the inferiority of the flesh of animals, as well as that of poultry, treated of by your Boston correspondent. Those allowed the liberty to feed in the manner more agreeable to their natures and habits, as you rightly judge, possess great superiority in the texture and flavor of game.

Fowls do not require a superabundance of food to make them fit for the table of an epicure; and poultry, as well as other animals, closely shut up, and *crammed* with nutritious food, may, and will become very fat, but they are in a feverish state while so confined, and their flesh is neither well flavored nor healthful. Beside this, unless kept perfectly clean, which, in boxes, is very difficult, they are apt to acquire a most hateful *smell* as well as taste. If, on the contrary, they are suffered to run at large, and are regularly fed, they will not wander far from the homestead, and will easily fatten, and what is of much more consequence, (for, who does not turn with loathing from the idea of *eating the fat* of any kind of poultry?) they grow in size, and afford firm, white, juicy flesh, the most wholesome, perhaps, of any description of meat that can be set before us.

As to the cheapness of the method recommended,

the increase to the northern farmer's profits would, I fear, be more than doubtful, if he bought the rice, at the average price of five cents a pound, and had it boiled for his fattening poultry. I "guess" they would eat before the sixteen days had passed, more than their carcasses would sell for in the market, be they in ever so fine a condition.

Under the head of cruelty to animals, I would notice, and bear my testimony against "confining the feet to the floor of the box"—even though the method employed be less cruel than that so common among English poulterers of nailing the feet to the board on which they stand. Ducks and geese, they place in rows of six to eight, with the feet thus fastened, and then secure another narrower board over their backs, thus effectually preventing change of place or position. Their neighbors, the French, have a method, (which I forbear to describe, for long may it be before any such are practiced on this side of the Atlantic,) of feeding turkeys and geese which causes the liver to increase to an enormous size, for which they obtain high prices from the pastry cooks, who make of them the much celebrated luxury *pâté foie gras*. An unsophisticated stomach revolts at the bare mention of eating a *diseased* animal, or any part of it; and no animal can be in a healthy state when one organ is enlarged beyond the limits fixed by nature. But setting this consideration aside, could any friend of humanity wish to add to the luxury and so-called refinements of his table, at the expense of the tortures the unfortunate animals thus treated must suffer?

For turkeys, barn-door fowls, and ducks, I know of no food upon which they grow larger, and fatten better, than bonnyclabber, (curdled, sour milk,) thickened with wheat bran. They eat it voraciously, and do not soon tire, as they are apt to do on some other kinds of food. E. S.

Eutawah, February 1st, 1849.

THE PROPER SOIL FOR ROSES.

ALL roses like a rich soil, which should be made *light* for the delicate rooting varieties, and more *tenacious* for the robust, hardy kinds.

In order to form a light soil, procure one bushel of seasoned turfy loam, half a bushel of well-decomposed stable manure, half a bushel of leaf mold and white sand, proportioned according to the texture of the loam, which will in no case require more than one fourth of its own bulk. The heavy soil may be composed of one bushel of stiff turfy loam, one bushel of nightsoil that has been mixed with the loam and laid by for a year, half a bushel of leaf mold or well pulverized manure and sand, as recommended above.

A little burnt earth added to either of the composts will improve them. These above-named materials should be thrown together, and frequently turned, for at least three months before they are used.

HOW TO CLEAN POTS AND BOILERS.—As soon as soups, boiled milk, gravies, &c. are taken out of your boilers, pour into them some hot water, which, even if you cannot then stop to clean them, will save a vast deal of the time and trouble that must be spent if they are left to become cold, with the gravy, or whatever else, hardened on them.

DEFENCE OF ROMPS.—Never find fault with girls, young girls in particular, if they are decided romps; but be thankful that they have the health and spirits necessary for romping. Better a romp than have a narrow chest, or a hectic flush on the cheek. Better wild as a hawk than tame as a dove. Better pay the butcher and the shoemaker than the physician and the undertaker.—*Chicago Journal*.

BUG POISON.—An ounce of quicksilver, beat up with the white of two eggs, and applied to the bedstead, with a feather, it is believed is the cleanest, safest, and surest bug remedy known.

HOW TO REMOVE WHITE SPOTS IN FURNITURE.—A warming pan or shovel of coals held over varnished furniture, it is stated, will take out white spots. The spots should be rubbed with flannel while the furniture is warm.

HOW TO REMOVE INK SPOTS FROM LINEN.—Take a piece of tallow, melt it, and dip the spotted part of the linen therein. It may then be washed, and the spots will disappear, without injuring the linen.

HOW TO RESTORE COLORS TO CLOTH.—An ox gall, it is said, will set any color, in silk, cotton, or wool.

Boys' Department.

AGRICULTURAL CHEMISTRY.—NO. 11.

I WILL now endeavor to acquaint you with the structure of plants, or their organization, and describe to you the manner in which the various organs perform their respective offices.

In describing the various parts belonging to plants, it is essential, in order to obtain an easy and perfect comprehension of the subject, to have the attention directed to some particular member of the great vegetable family, and after becoming well acquainted with that, you can easily apply the description or character to any other, as there is a remarkable correspondence between them all. In the largest plants, we may expect to find the different organs most distinctly developed. I will, therefore, select a *forest tree* as the most fit embodiment of those organs common to nearly all vegetables. In examining a tree, three parts at once present themselves for investigation, namely, the root, the trunk, and the leaf.

1. *The Root.*—The office of this is to give the tree a firm support in the soil, to extract nutriment for its supply, and to return to the earth such matter as has been separated from the nutritive part of the food. Roots absorb liquids by means of the fine, spongy texture of their extremities which act as mouths and imbibe the moisture that surrounds them. I say they absorb *liquids*, for we have no proof that solid matter, although reduced to the finest powder, can gain admittance, nor that gases can enter except when combined with liquids. But all liquids are not admitted, for the root seems to possess a discriminating power, which enables it to

reject such aliment as would be injurious or devoid of nourishment; just as animals, by their sense of taste and smell, are the roots enabled to distinguish wholesome and unwholesome food. There are, I admit, exceptions to this statement, for roots will imbibe brine and many other liquid substances not congenial to the nature of plants, just as an animal may be made to swallow arsenic by mixing it with its food; but this no more proves that the root has no discriminating power, (as some contend,) than the fact that animals may be made to eat poison proves them to be without taste or smell. As brine and other poisonous solutions which roots have been made to absorb, are not common to the soil where they grow, it was not necessary that Nature should endow them with the power of rejecting such substances; for she is a good economist, and does not furnish either plants or animals with such faculties as are not of general use. We cannot in the present state of science define the nature of this selecting power which roots possess, but numerous experiments have proved its existence.

I mentioned that the root possesses another power—that of returning to the soil such matter as is not required by the plant. This is called the *excretory power*. Some writers on this subject deny its existence, while others not only contend that roots have this power, but also assert that the matter which they return to the soil is detrimental to the succeeding crop, providing it be of the same kind, though not injurious to any other kind of plant. This theory was evidently formed to explain the reason why the same kind of produce does not thrive when repeated for a succession of years, or in other words, to account for the advantages of rotation. But while we admit that the roots of plants have an excretory power, I do not think we have any good reason for believing that the matter excreted has any influence on the succeeding crop. I will explain the advantages of rotation in a subsequent letter, and, I trust, on more philosophical principles than any contained in the above hypothesis.

2. *The Trunk, or Stem.*—We will now direct our attention to the stem or trunk. The several parts belonging to this, with which you are familiar, are the *bark*, the *wood*, and the *pith*. The bark, or outer covering, may be easily separated into two portions—the outer called the *epidermis*, the inner, lying next to the wood, the *liber*. The sap, or juice, in its descent, flows through the liber, as will be presently described. The woody part of the trunk is usually found to consist of two portions differing in appearance; the inner portion is called the *heart*, and is commonly of a brownish color; the outer, enclosing this, is called the sap wood, or *alburnum*. The pith is of a spongy texture, sometimes occupying a considerable space in the centre, as in the elder, but more frequently small, as in the oak, maple, &c.

You may have observed in the ends of logs sawed transversely, small white lines, running from the centre to the circumference, or from the pith to the bark, like spokes in a wheel. These are called *medullary rays*. They are composed of a similar substance as the pith, and seem to form a medium of communication between the pith and bark, though for what purpose is not known. Although

these medullary rays appear like mere lines running across the end, they in reality extend through the whole length of the trunk, dividing both heart and sap wood into distinct sections.

The parts, or divisions, of the trunk, above described, are such as are apparent without minute observation; but a closer inspection discloses small cells, or tubes, extending lengthwise through the trunk, and arranged in groups, or bundles. Through these channels the sap flows, passing in its ascent through the tubes of the alburnum, and in its descent through those of the liber and bark. In that portion of the trunk called the heart, the cells have become mostly filled and closed with solid matter, so that but little juice can flow through them. The heart, therefore, is the more firm and solid portion, and on that account the more valuable for mechanical purposes where strength and durability are required. In all ex-tropical trees, the palm family excepted, a new layer of wood is formed every year next to the bark, which forms a ring around the trunk, easily recognized in most trees when cut or sawed across; their age may be readily ascertained by counting these rings, or layers.

3. *The Leaves.*—These are very important organs, as they prepare the juice for the office it performs in forming new wood, and thus promoting the growth of the tree. Their office in this respect may be compared to that of the lungs of animals, for the lungs in like manner prepare the blood for its destined purpose.

The leaf is connected both with the wood and the bark of the twig to which it is attached; its fibres communicating with the woody part of its stem, while the green part of the leaf may be considered as an expansion of the bark. The tubes, or cells, which I have described as extending through the alburnum and liber, pass into the leaf and diffuse themselves through its substance. Now there are two sets or layers of these vessels, the one spread along the upper, the other along the under surface of the leaf. Those along the upper surface come from, and connect with, the wood or alburnum, and those along the lower surface connect in like manner with the vessels belonging to the bark or liber. The vessels, running through the leaf communicate with the air by means of innumerable pores which permit the escape of vapor, or admit the entrance of carbonic acid, as the case may require. It is supposed, (I know not on what authority,) that the office of the pores on the upper surface is to allow vapor to escape, while the absorption of carbonic acid, (and perhaps other gases,) is performed by the pores of the lower surface.

The Course of the Sap.—The juice, when first absorbed by the roots, is unfit for the purpose of nutrition. Its upward passage, as I have before said, is through the tubes of the sap wood, and these tubes are connected with those passing into the leaf. The sap in its ascent is slightly changed, though not materially, until it reaches the leaf, when it is exposed to the action of light and air, and reduced in quantity by the evaporation of a part of the water it contained. It is made thicker and somewhat mucilaginous or gummy, by parting with a portion of its water. Its chemical character is also changed by the action of the atmosphere

as well as by that of light; carbonic acid is drawn from the air, and it returns through the liber, carrying with it a large portion of this gas. Now, in what manner the carbon is separated, or how it is that those chemical changes are performed by which the materials contained in the juice are converted into wood, fruit, or seed, I cannot inform you. Some may satisfy themselves by saying these changes are produced by a *living principle* in vegetables, but this explanation is far from being satisfactory, and leaves us in doubt and darkness as to the nature of this *principle*, and the manner in which it acts. But what causes the motion of the juice? Why does it rise contrary to the force of gravity? This question concerning the motion of juices in vegetables, like that of the circulation of blood in animals, has given rise to much speculation, and to many theories. One method of explaining the ascent of sap is, by supposing it to be the result of capillary attraction; another, and the one adopted by Liebig, (See American Agriculturist, vol. vii, p. 276,) is that the evaporation from the surface of the leaves produces a vacuum, (an empty space,) in the upper part of the tubes, which causes the fluid to rush in from below on a principle similar to the one by which water is forced upward in a pump; others again have resorted to the *vital principle*, (a term hard to define,) but there are weighty objections to all these theories. The one adopted by Johnston appears more satisfactory, although it must be admitted that this rather *illustrates* than *explains* the fact—just as the falling of an apple illustrates without explaining the force of gravity. It is as follows:—

Take a metallic tube open at both ends; over one end tie a piece of bladder, and into the other pour some water saturated with sugar, and immerse the lower end, (that over which the bladder is tied,) in some pure water. The water will penetrate the bladder, rise in the tube, and run out at the top, and continue running out until the water within, and that without the tube contain nearly the same proportions of sugar. Now sugar is a common ingredient in the juices of plants, and the above experiment may be made with several other substances which are found in vegetable juices. Is it not, then, highly probable that those liquids which the roots of plants imbibe are drawn up through their small tubes on this principle? Neither capillary attraction, nor the production of a vacuum by evaporation, nor the indescribable vital-principle hypothesis will account for the ascent of the water in the tube in the above experiment. Yet, while we admit that the chemical force by which the water is made to ascend in the tube is the principal one in causing the ascent of the sap in trees, I do not know that there is anything unreasonable in supposing that it may be aided in plants by capillary attraction, and also by evaporation from the leaves. This indeed seems quite probable when we consider that water can only be made to rise a few feet in our metallic tube, while in trees it is sometimes drawn upward of a hundred feet or more.

In my next letter, I will describe some of the most important of the compounds belonging to vegetables.

J. MC KINSTRY.

Greenport, Columbia Co., N. Y. Feb. 1st, 1849.

FOREIGN AGRICULTURAL NEWS.

By the Steamer Niagara we are in receipt of our foreign journals to the 27th of January.

MARKETS.—*Ashes*, a slight decline. *Cotton*, an advance of $\frac{1}{4}$ d. per lb. On most other kinds of American produce, either a trifling advance or an increased briskness of sale.

Money continues very abundant at $2\frac{1}{2}$ and 3 per cent.

American Stocks. An increased demand at a moderate advance in prices.

Business generally has greatly revived in England and France; and if no more political outbreaks occur, we may look for a greatly improved state of things during the present year.

Important Fact in the Use of Liquid Manure.—Liquid manure is wasted if it is given to plants not in full growth, or just beginning their growth. This is true in all cases. If applied at other periods, it will have some effect, but not so much.—*Gard. Chron.*

How to Restore Ropy Cider or Beer.—Put half a pound of mustard seed into 60 gallons of ropy cider or beer, bung it closely up, and it will be fit for use in one or two weeks.—*Ibid.*

Demand for Horses in England.—It is stated that the government of France has a number of agents in England for purchasing horses suitable for their troops. The steamboats from London bridge and Falkstone, are said to be daily conveying fine horses, also, to Boulogne, for the supply of the Neapolitan government.

New Variety of Wheat.—Advices from St. Petersburg mention that a new variety of wheat has recently been discovered and cultivated in Bessarabia. It is called *Kolus*, or large-eared wheat, on account of the peculiar beauty of its ears.

Clipping Horses.—Observing a paragraph relative to clipping horses, I beg to state that I have lately been informed that the process injures the constitution of the horse in the long run, causing the animal to wear out sooner, notwithstanding every care may have been taken with him at the time of the operation and subsequently; although it is conceded that at the time of clipping, the horse is thereby enabled to perform his work more easily, and also thrives better.—*Agricultural Gazette.*

Effects of Living on Potatoes.—A person living entirely on potatoes may be said to be on the brink of a precipice, without a single inch of ground before him, when the only safety lies in retreat. The disadvantages may be shown in three different ways. 1. It leads to imperfect bodily strength and unsoundness of health. 2. To increased mortality and shortness of life. 3. To loss of energy, and to a kind of stupidity, and want of interest in everything but what concerns the merest animal interests. A country in this state is always ripe for rebellion, and ready to join in every insurrection.—*Philosophical Magazine.*

Extensive Cultivation of Potatoes in Ireland.—The Ballyshannon Herald, gives the following in the agricultural report for the county of Donegal:—Wheat and potatoes are putting down in this neighborhood. If seed can be got moderate, there will be a vast quantity of potatoes planted this year, the demand for conacre land being very extensive. There will also be large sowings of turnips and parsnips, as it is now fully proved that an acre of turnips or parsnips pays better than an acre of corn or wheat; but the native esculent, (the potato,) is still the general favorite. Throughout this country the potato produced nearly an average crop last year, and the rot was not extensive—those housed are keeping well. About Donegal, Stranorlar, Letterkenny, Dunfanaghy, and Raphoe, the spring work is in a forward state. A vast quantity of wheat is down, and some potatoes also.

Grafting Grasses.—Signor Calderini, of Milan, having observed that grasses have at each knot a shoot enclosed in the sheath of the leaf, which can easily be drawn out when the plant is young, introduced some of these into plants of the same species, having previously removed their young shoots, and more than one half of them succeeded. He then extended his operations to grasses of different species, and succeeded in grafting panic on millet. The only difference observable in the grafted individuals was, that they ripened their seeds somewhat later.—*Annales des Sciences Naturelles.*

Salt as a Garden Manure.—I can strongly recommend a dressing of this manure (except on very stiff land.) To grow asparagus and seakale in perfection, it is essential, and I find a general improvement effected by its use in the bulk and quality of our culinary crops. It also destroys snails and other insects. For general crops, about $\frac{1}{4}$ lb. to the square yard will be sufficient; this should be sprinkled evenly over the ground when it is bare, and if dry, forked in immediately. To the crops of seakale and asparagus twice this quantity may be given; it should be spread over the beds in winter, or early spring, and either forked in at once or left to be dissolved by the rain.—*Agricultural Gazette.*

Small Pox in Sheep.—At a time when a disease resembling small pox is prevalent in sheep, the following extract from an unpublished translation of Linnaeus's "Tour in West Gothland," may have some interest:—"Some time ago the sheep had had an eruption upon the body, which the people called small pox; but a person who had given his sheep Cardebenedict, (*Oniscus benedictus*), in the winter, had completely preserved them from such a distemper, although they had been fed in the same pasture with others which were diseased."—*Linnaei Westgotaresa*, p. 145, published in 1747, in Swedish. It does not appear clearly from the context where this took place, but probably in the Island of St. Helena, of which he had been speaking in the preceding sentence.

Caper Plant at Malta.—I observed the caper bush growing in great abundance out of the crevices in the walls and ramparts on the island of Malta, where I spent two days in the end of June last. It was in full bloom at that time, and was really a handsome object; the long white stamens tinged with purple contrasted finely with the clear green foliage. Some friends who were wandering about over the island with me, sight-seeing, fell into the common error regarding the capers of commerce, and stoutly argued that it was the seed of the plant which we eat at our tables; nor could I convince them to the contrary until I procured a branch with some unexpanded flower buds upon it, and showed that these parts were what were gathered for use. It is a curious fact that caper eaters generally suppose they are eating seeds instead of flowers, and it is sometimes hard to argue them out of that belief.

I may mention, in passing, for the amusement of your readers, a good pun that was made unintentionally, I believe, by a former governor of this island. Some of the people had been in the habit of gathering and using the caper buds, much to the annoyance of the government, and it determined to put a stop to the practice. An order was therefore issued, which stated that "no one was allowed to cut capers on the walls of Malta."—*Notes of a Traveller.*

Agricultural Education in the Island of Cuba.—Three of the principal schools of Havana have instituted a new department in which instructions are given in Chemistry as applied to Agriculture, and the science of *Agronomia*, or cultivation of the various kinds of field crops.—*La Crónica.*

Editor's Table.

STATE AGRICULTURAL SCHOOL.—We notice with great pleasure, that a committee, appointed by the New-York State Agricultural Society, has addressed a memorial to the Legislature, strongly urging the establishment of an agricultural school, on the most enlarged and liberal basis. If our farmers feel a sufficient interest in this matter, they can carry it through. And if they feel no more than they have ever done since Adam's expatriation, they can as easily secure *nothing*. We shall soon see how much zeal and intelligence they will show in this subject.

TRANSACTIONS OF THE AGRICULTURAL SOCIETIES OF MASSACHUSETTS, FOR THE YEAR 1847, collated from the original returns, by the Secretary of the Commonwealth, have been received, a further notice of which will be given in a future number.

AGRICULTURAL SURVEY OF WASHINGTON COUNTY, N. Y.—Dr. Asa Fitch, of Salem, Washington county, has finished his survey of that county, for which the sum of \$200 was appropriated; and it will be received in time to be published in the State Transactions.

LARGE COW.—The Utica Gazette says that Benjamin Canoon recently sold a cow to a butcher, of that city, which weighed 2,050 lbs. Her value, at 5 cents per pound, was \$102.50.

ARTESIAN WELL.—The Charleston, S. C., Mercury contains the following announcement of the progress of an Artesian well in that city:—We are glad to learn that this important work is progressing most satisfactorily, and that every day's indications give stronger and stronger assurances that the anticipations of its projectors will be fully realized. The auger has now penetrated to the depth of four hundred and twenty-eight feet, and the water in the tube has risen to within one foot of the surface.

LUSUS NATURÆ.—Mr. P. Baker, of Greene county, Ohio, raised a spire of yellow corn last season, nine feet and three inches high, with two tops, dividing at the height of three feet above the ground. At the point where the stalk divided, there put out and grew two perfect ears of corn, which arrived at perfection and have been saved for seed.

ADDRESS OF L. F. ALLEN, LATE PRESIDENT OF THE N. Y. STATE AGRICULTURAL SOCIETY.—We have been more than gratified by the perusal of the above-named address, kindly forwarded us by B. P. Johnson, Esq. Its merits were implied from the fact, that this is the first address in the history of the society, whose publication has been called for by the Legislature of our state, of which, they ordered twenty times the usual number of copies printed for their own use, and 500 copies for the society. There are no decidedly new points started in this address, but strong reasons and cogent illustrations, albeit somewhat bluntly stated, are given why our farming interests should command more of the respect and attention of our community.

RE-PRINT OF FOREIGN REVIEWS.—Messrs. Leonard Scott & Co., 79 Fulton street, New York, publish the following periodicals, viz:—The London Quarterly Review, The Edinburgh Review, The Westminster Review, The North-British Review, and Blackwood's Edinburgh Magazine. All the above periodicals are reprinted in New York, immediately on their arrival by the British steamers, in a beautiful clear type, on fine white paper, and are faithful copies of the originals. Blackwood's Magazine being an exact *fac-simile* of the Edinburgh edition. The prices of the re-prints are less than one third of those of the foreign copies, and while they are equally well got up, they afford all that advantage to the *American* over the *English* reader.

A tale by Bulwer is now in course of publication,

in Blackwood, which adds considerably to the interest of the work. The North-British Review is in the third year of its existence. Its articles are religious as well as literary, and are of uncommon vigor and ability. It is the organ of the Free Church party of Scotland.

SHEEP HUSBANDRY IN THE SOUTH; Comprising a Treatise on the Acclimation of Sheep in the Southern States, and an Account of the Different Breeds. Also a Complete Manual of Breeding, Summer and Winter Management, and of the Treatment of Diseases, with Portraits and Illustrations; in a Series of Letters from Henry S. Randall, Esq., of Cortland Village, New York, to R. F. W. Allstone, Esq., of South Carolina. Philadelphia, J. S. Skinner & Son, pp. 320 octavo.

These letters originally appeared in the "Farmer's Library," edited in this city by the elder Mr. Skinner, now of the "Plow, Loom, and Anvil," in Philadelphia; and by his publishing firm, are now gathered up and put into the handsome volume before us, exclusively on his own account. To the author these letters were entirely a labor of love; written with the patriotic motive of aiding the southern planter and farmer, in extending and improving in the highly important occupation of sheep husbandry among them. We need not say how deeply we are interested in this subject, for we have only to appeal to the early volumes of the *Agriculturist*, to convince our readers of that. We know of no country on earth equal to the hilly and mountainous region of the south for growing fine wool; and we hope to live to see the day when this lovely and fertile region will be dotted with flocks attended by shepherds and their dogs, as numerous as we now find them in Great Britain. The product of wool would then be fully equal to that of cotton, and manufacturers would rapidly follow, giving such wealth and strength to the south as its statesmen of the present day do not dream of.

Messrs. Skinner & Son have brought out this work of Mr. Randall's in a style very agreeable to look at. In order to give our readers an idea of the value of its contents, we shall hereafter make some extracts from it. In the meanwhile, we advise all interested in the improvement of the agriculture of the country, and especially of that at the south, to possess themselves of a copy. In one thing it is unique—it abounds with statistics, which to obtain, one would be obliged to turn over a large library. In this department, the author has been indefatigable, and shows great industry and research.

MUSIC OF THE ASS.—The ass is called a bad vocalist, though some amateurs prefer him to the mule; but, perhaps, he is underrated. There are many notes, when uttered alone, which are shocking to the ear, that have, in concert, an agreeable harmony. The gabble of a goose is not unpleasant in the orchestra of the barnyard, and there are many instances, no doubt, in which braying would improve harmony. If we look closely into nature, we will find nothing, not even the jargon of a frog pond, created in vain. What the Italians understand, and what most other nations *do not*, is the harmonious composition of discordant sounds. If a general concert of nature could be formed, the crow as well as the nightingale, would be necessary to the perfect symphony; and it is likely even the file and handsaw might be made to discourse excellent music. But even in a solo, the ass, according to Coleridge, has his merits. He has certainly the merit of execution. He commences with a few prelusive notes, gently, as if essaying his organs, rises in a progressive swell to enthusiasm; and then gradually dies away to a pathetic close; an exact prototype to the best German and Italian compositions, and a living sanction of the genuine and authentic instructions of l'Academie de Musique.—*Anon.*

REVIEW OF THE MARKET.

PRICES CURRENT IN NEW YORK, FEBRUARY 17, 1849.

ASHES, Pots,.....per 100 lbs.	\$6 37	to	\$6 43
Pearls,.....do.	7 69	"	7 75
BALE ROPE,.....lb.	6	"	8
BARK, Quercitron,.....ton.	26 00	"	28 00
BEANS, White,.....bush.	75	"	1 25
BEESWAX, Am. Yellow,.....lb.	19	"	22
BOLT ROPE,.....do.	11	"	12
BONES, ground,.....bush.	40	"	55
BRISTLES, American,.....lb.	25	"	65
BUTTER, Table,.....do.	15	"	25
Shipping,.....do.	9	"	15
CANDLES, Mould, Tallow,.....do.	11	"	13
Sperm,.....do.	25	"	38
Stearic,.....do.	20	"	25
CHEESE,.....do.	5	"	10
COAL, Anthracite,.....2,000 lbs.	5 00	"	6 00
CORDAGE, American,.....lb.	10	"	12
COTTON,.....do.	6	"	10
COTTON BAGGING, Amer. hemp,....yard,	15	"	16
FEATHERS,.....lb.	30	"	40
FLAX, American,.....do.	8	"	9
FLOUR, Northern, Southern and West'n bbl.	5 50	"	6 06
Fancy,.....do.	6 25	"	6 50
Richmond City Mills,.....do.	6 75	"	7 00
Buckwheat,.....do.	—	"	—
Rye,.....do.	3 25	"	3 44
GRAIN—Wheat, Western,.....bush.	1 10	"	1 32
Red and Mixed,.....do.	1 00	"	1 20
Rye,.....do.	65	"	66
Corn, Northern,.....do.	64	"	66
Southern,.....do.	54	"	63
Barley,.....do.	65	"	68
Oats,.....do.	31	"	45
GUANO, Peruvian,.....2,000 lbs.	50 00	"	50 00
Patagonian,.....do.	35 00	"	40 00
HAY, in bales,.....do.	50	"	56
HEMP, Russian, clean,.....ton.	205 00	"	225 00
American, water-rotted,.....do.	160 00	"	220 00
American, dew-rotted,.....do.	140 00	"	200 00
HIDES, Dry Southern,.....do.	7	"	8
HOPS,.....lb.	4	"	12
HORNS,.....100.	2 00	"	10 00
LEAD, pig,.....do.	4 50	"	4 56
Pipes for Pumps, &c.....lb.	5	"	7
MEAL, Corn,.....bbl.	2 75	"	3 00
Corn,.....hhd.	14 00	"	14 50
MOLASSES, New Orleans,.....gal.	25	"	30
MUSTARD, American,.....lb.	16	"	31
NAVAL STORES—Tar,.....bbl.	1 75	"	2 00
Pitch,.....do.	1 25	"	1 75
Rosin,.....do.	90	"	1 25
Turpentine,.....do.	2 50	"	3 00
Spirits Turpentine, Southern,....gal.	35	"	36
Oil, Linseed, American,.....do.	55	"	56
Castor,.....do.	1 25	"	1 50
Lard,.....do.	65	"	70
IL CAKE,.....100 lbs.	1 00	"	1 15
EAS, Field,.....bush.	75	"	1 25
Black eyed,.....do.	1 25	"	1 50
MASTER OF PARIS,.....ton.	2 25	"	3 00
Ground, in bbls.,.....of 300 lbs.	1 12	"	1 25
PROVISIONS—Beef, Mess,.....bbl.	9 00	"	13 50
Prime,.....do.	5 00	"	8 50
Smoked,.....lb.	6	"	12
Rounds, in pickle,.....do.	4	"	6
Pork, Mess,.....bbl.	11 00	"	15 00
Prime,.....do.	7 00	"	10 00
Lard,.....lb.	7	"	8
Bacon sides, Smoked,.....do.	3	"	4
In pickle,.....do.	3	"	4
Hams, Smoked,.....do.	5	"	9
Pickled,.....do.	4	"	7
Shoulders, Smoked,.....do.	4	"	5
Pickled,.....do.	3	"	4
ALFALFA,.....100 lbs.	2 88	"	3 38
Common,.....sack,	1 17	"	1 30
SILOS—Clover,.....lb.	20	"	35
Timothy,.....bush.	2 00	"	3 50
Flax, clean,.....do.	1 30	"	1 40
rough,.....do.	1 20	"	1 25
SODA, Ash, cont'g 80 per cent. soda,....lb.	3	"	—
Sulphate Soda, ground,.....do.	1	"	—
SUGAR, New Orleans,.....do.	4	"	6
SUMAC, American,.....ton,	35 00	"	37 00
TALLOW,.....lb.	8	"	9
TOBACCO,.....do.	2	"	7
WHISKEY, American,.....gal.	23	"	25
WOOLS, Saxony,.....lb.	35	"	60
Merino,.....do.	25	"	35
Half blood,.....do.	20	"	25
Common do.....do.	18	"	20

NEW-YORK CATTLE MARKET.

At Market.—1,100 Beef Cattle, (400 southern, the remainder from this state and east,) 60 Cows and Calves, and 2,500 Sheep and Lambs.

Beef Cattle.—The market is firm in prices. The sales run from \$7 to \$9 per hundred, which may be considered as an average, but some choice animals sell as high as from \$9.50 to \$10. The number of head on hand is estimated to be 100.

Cows and Calves.—All taken at from \$22.50 to \$47.50.

Sheep and Lambs.—These sold from \$1.50 to \$5.50 each—250 head on hand, unsold.

REMARKS.—Cotton and Grain are quite active with a slight advance, especially of the former. In other articles nothing of moment has transpired since our last.

Money is more difficult to be obtained.

The Weather has been intensely cold during February; yet in consequence of the excellent state of the roads, it has proved highly favorable for the northern farmer to get his produce and lumber to market. The prospects are good for the business of the ensuing season.

TO CORRESPONDENTS.—Communications have been received from T. B. Miner, J. R. S., Samuel Allen, E. S., Shelton Beach, Solon Robinson, Rip Van Winkle, A. Fleming, M. W. Philips, John Wilkinson, Gowanus, and Reviewer.

Land Slides.—J. R. S., of Stockholm, N. J.—The cause of the land slide you mention, was doubtless a collection of water in a cavity in the hill, which forced out the bank by hydrostatic pressure. For an explanation of this phenomenon, see almost any elementary work on Natural Philosophy.

To Clarify Honey, dissolve it in an equal part by weight of water; allow it to boil up from four to six times without skimming; then remove it from the fire, and after being cooled, strain it through several strong linen cloths stretched horizontally over a jar or tub, and covered with a layer of clean and well-washed sand an inch in depth. When passed through these strainers, it will be found to be of the color of clear white wine. The liquor is finally to be evaporated over the fire to the thickness of common syrup.

Raising Corn without Manure.—Several inquiries have been made how our Winchester correspondent, of Virginia, raised 83 bushels of corn per acre, without manure, while his neighbors could grow only 35 bushels. Can he inform how it was done?

ACKNOWLEDGEMENTS.—A circular containing the list of officers of the American Agricultural Association; Transactions of the Worcester County, (Mass.) Agricultural Society, for the year 1848.

VIRGINIA LANDS.

THE attention of Northern Farmers who wish to purchase in Fairfax County, Va., is invited particularly to two farms for sale, three miles east from Fairfax Court House, thirteen from Alexandria, and fourteen from the city of Washington. There are no buildings on either tract, but, by following the custom of the country, comfortable and temporary ones can be cheaply built. The soil is well adapted to farming purposes, and there is timber on them, near two sawmills.

These farms would sell in the north, for from \$50 to \$100 per acre, and can be bought here in a more pleasant and healthy climate, one for eight, the other ten dollars per acre, on easy terms, and a good title given.

Further information given, if requested, by T. R. Love, trustee, either personally, or by letter (postage paid) directed to Fairfax Court House, Va.

f. ff.

H. FULLER.

AYRSHIRE CATTLE FOR SALE.

THE subscriber having disposed of his farm, will sell at public auction, at Three-Hills Farm, on the Cherry-Valley turnpike road, three and a half miles west of Albany, on the 14th of March next, his choice herd of Ayrshire cattle, consisting of the imported cow "Alice," her daughter "Fairy," for which the first premium was awarded at the fair of the New York State Agricultural Society, held at Saratoga Springs, in 1847; "Lassie," three years; "Moggy," two years; "Norma," one year, and "Jenny Deans," nine months old. Two-year old bull and bull calf. Also several head of cows and heifers, a cross of Ayrshire and Durham. These cattle, except Alice and Fairy, were bred by the subscriber, and are principally young and rich milkers. Also, two young boars and several breeding sows of the Medley breed.

Catalogues, with pedigrees, will be furnished on the day of sale.

C. N. BEMENT.

Albany, Jan. 1st, 1849.

Et.

PERUVIAN GUANO.

ONE THOUSAND TONS of Peruvian Guano just received from the Chinche islands for sale, in lots to suit purchasers. Also, THREE HUNDRED TONS Patagonian Guano.

A. B. ALLEN & Co., 189 & 191 Water St.

A GOOD BOOK COMING!

COLE'S AMERICAN FRUIT BOOK.

S. W. COLE, Esq., author of the popular work entitled *The American Veterinarian*, of which 22,000 copies have already been published, has, after years of patient labor and close investigation, completed his great work, entitled *Cole's American Fruit Book*, a work which we believe is destined to have a more widely-extended circulation than any similar work, ever before offered to the American public. We believe so for the following reasons:—

First—It is a mature work and a practical one, one on which Mr. Cole has spent many years of study and close examination, and knowing the wants of the community has met those wants, in a plain, concise, and familiar manner, avoiding technicalities, and ultra scientific specifications and definitions, useful only to the few—made a work intelligible to all. It will be emphatically a book for the people.

Secondly—It will have an unprecedented sale on account of its cheapness. It will make a volume of 288 closely-printed pages. Illustrated with over one hundred beautifully-executed engravings, by Brown, and will be sold for 50 cents, firmly bound in leather, and 62½ cents in fancy cloth, with gilt backs. It will contain full directions for raising, propagating, and managing fruit trees, shrubs and plants, with a description of the best varieties of Fruit, embracing several new and valuable kinds; embellished with engravings, and outlines of fruit trees, and various other designs, emphatically a book for everybody. As well for the man who eats fruit as for him who raises it. This valuable work will be published early in February.

100 agents, active, intelligent, and honest, are wanted to sell this book, in every state in the Union. A cash capital of from \$25 to \$50 will be necessary. Address (post paid), the publishers, John P. Jewett & Co., 23 Cornhill, Boston.

A rare chance for agents to make money.
C. M. Saxon, No. 121 Fulton Street, New York, general agent for the publishers. f3t.

POUDRETTE.

THE LODI MANUFACTURING CO. offer their new and improved Poudrette, for sale at their usual rates—1 bbl. \$2; 3 bbls. \$5, and \$1.50 per barrel for any quantity over 7 barrels, delivered free of expense, on board of vessels in New York. At the factory, where vessels, drawing eight feet of water can come, it will be sold at 25 cents per bushel.

The expense per acre in manuring corn with Poudrette, will not amount to more than \$4, reckoning 25 cents per bbl., freight and all the necessary labor included. On land previously manured, or good sward land, one gill to the hill is sufficient; on poor ground, a good crop can be raised by one gill to the hill at planting, and one at the last hoeing. The cost in labor alone, of manuring in the hill with barn-yard manure, will amount to more than the first cost of Poudrette, with all the freight and charges added; and the effects of this manure are quicker; the corn grows more vigorously, and comes to maturity earlier. A fair trial, however small, is respectfully solicited.

Apply, if by letter, post paid, to the LODI MANUFACTURING CO., 51 Liberty st., New York. f3t.

SEED AND AGRICULTURAL STORE,
LOUISVILLE, KY.

FOR SALE—1,500 bushels clean and striped Kentucky Blue Grass.

1,000	"	Orchard Grass.
700	"	Red Top.
200	"	Pure Timothy.
500	"	Red Clover.
500	"	New Hempseed.

Also, White Clover, Lucern, Millet, Buckwheat, Corn, Oats, &c., &c., &c. Also, every variety of

Garden and Flower Seeds, together with a full supply of Farm and Garden Implements; such as Plows, Harrows, Wheat Fans, Horse Rakes, Hoes, Hand Rakes, Spades, Cradles, Scythes, Snaths, Ox Yokes, Cultivators, Wheelbarrows, Strawcutters, Churns, Cistern Force Pumps, Water Rams, Corn Mills for Hand or Horse Power, and a large assortment of Horticultural Implements. Trees from several nurseries in this vicinity. Guano, Plaster of Paris, and Lime, constantly on hand. Orders from abroad promptly attended to, and any information as to price, &c., &c., given on application, post paid.

Refer to A. B. Allen & Co., N. Y. Ruggles, Nourse, Mason & Co., Boston. R. Sinclair, Jr. & Co., Baltimore.
mh A. G. MUNN, Louisville, Ky.

BAGLEY'S GOLD PENS.

A. G. BAGLEY & CO. would very respectfully call the attention of dealers in their wares, that they have on hand a superior article of "Bagley's Improved Gold Pens," with their new style of patent holders, together with all styles of Gold and Silver Pen and Pencil Cases of beautiful patterns, suitable for the holidays, at their warehouse (old stand), 189 Broadway, New York. j3t

Recently published, by Harper & Brothers, New York,
MACAULAY'S HISTORY OF ENGLAND
FROM THE ACCESSION OF JAMES II.

Fols. I. & II. 8vo, Muslin, gilt, \$2 each.

ESTIMATED even by the ordinary means of judgment, Mr. Macaulay's qualifications and opportunities are such as to warrant no ordinary anticipations. By the side of signal political facilities, the minor advantages of rich materials and an almost untrodden field become nearly imperceptible. The domestic and the external life of the British nation are to be distinctly portrayed. A perfect history can never be written; but the approximation has been made by Mr. Macaulay to this consummate ideal. He has, as we before observed, had the double advantage of unusually good guidance and an almost untrodden field.—*London Times*.

A book which will be highly popular as long as the English language lasts. His style is terse and brilliant, and his general views of a far-seeing and impartial character. It is, indeed, delightful reading, but it stands in no need of the praise—the great praise—we are bound to bestow upon it.—*London Literary Gazette*.

Mr. Macaulay frequently rectifies a general prejudice by bringing to his task a calmer and more searching consideration, if not a larger mind, than has yet been brought to the subject. Absolute novelty in the main facts will not, of course, be found, but in those traits that mark the manners of the time, the general reader will be introduced to almost a new world.—*London Spectator*. f2t.

SELLING OFF—LINNÆAN BOTANIC GARDEN
AND NURSERY,

Late of William Prince, deceased, Flushing, L. I., near New York. Winter & Co., Proprietors.

IN consequence of the decease of the junior and of the advanced age of the surviving partner, the entire stock of this establishment, comprising every description, including the neatest and choicest varieties of Fruit and Ornamental Trees, Shrubs, Vines, Plants, Roses, &c., will be disposed of at very reduced prices, in order to close the business as speedily as possible.

Orders accompanied with the cash, to the amount of ten dollars, or upwards, will be supplied at a reduction of 25 per cent. from the usual prices.

Nurserymen, venders, and others, wishing to purchase by wholesale, will be supplied at such reduced prices according to kind and quantity, as will probably prove satisfactory to them.

Descriptive Catalogues, gratis, on application, post paid. f2t.

THE INDEPENDENT,

A NEW RELIGIOUS NEWSPAPER, published weekly, by S. W. BENEDICT. Office 291 William street, N. Y.

This paper is under the united editorial control of Leonard Bacon, D.D., of New Haven, Rev. Joseph P. Thompson, of New York, Pastor of the Broadway Tabernacle Church, and Rev. Richard S. Storrs, Jr., of Brooklyn, Pastor of the Church of the Pilgrims. The most efficient assistance has also been secured in all the departments of the paper, both foreign and domestic, and everything that transpires in any part of the world, affecting the condition of man, will find the earliest record in its columns.

The paper is not the organ of any Christian sect or denomination; but as its editors and proprietors are all of them connected with the Congregational Churches of this city and Brooklyn, they will naturally look to their brethren connected with such churches, both at the east and the west, for sympathy and support. In return, they will endeavor to give them such information, advice or instruction, as may be most suited to their condition and wants as members of the great family of Christ.

The size of the paper is the same as of the largest of the other religious papers in this city.

Terms.—The price will be \$2.50 cents per annum for single subscribers, payable in advance.

Clergymen sending us four subscribers with \$10, will be allowed a fifth copy gratis for one year.

Advertisements of books, periodicals, schools, and of such matter as may be particularly important to churches, or religious families, will be admitted at the rate of 75 cents for 16 lines for the first insertion, and 50 cts. each subsequent insertion. f3t.

LAND FOR SALE.

FOR SALE—2,000 acres of land lying in the marl region of Eastern Virginia, and within two to seven miles of the town of Fredericksburg. Apply to LAYTON Y. ATKINS, dec. lyr. Fredericksburg, Va.

PREMIUM HAY AND STRAW CUTTERS.

NEW and splendid Rotary Cylinder Straw Cutters, simple, strong, and easily worked. For sale at reduced prices by A. B. ALLEN & CO., 189 and 191 Water street, N. Y.

C. M. SAXTON, PUBLISHER,

No. 121 FULTON St., NEW YORK,

Would particularly call attention to his assortment of works pertaining to Agriculture and Rural Economy, a few of which are enumerated, with the retail prices, from which a liberal discount will be made when a number of works are ordered at one time, viz:—

Townley on the Honey Bee. 50 cents.
The American Flower Garden Directory. \$1.25.
The American Shepherd. \$1.
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The American Florist. 33 cents.
Parnell's Applied Chemistry. \$1.
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Dana's Prize Essay on Manures. 12½ cents.
Fessenden's American Gardener. 75 cents.
Knowlson's Cattle or Cow Doctor. 25 cents.
Complete Gardener and Florist. 37 cents.
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Downing's Fruit Trees. \$1.50.
" Landscape Gardening. \$3.50.
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Lang's Highland Cottages. \$1.50.
Every Lady her own Flower Gardener. 38 cents.
Mason's Farriery. \$1.
Hind's ditto. 75 cents.
Every man his own Gardener. 12½ cents.
Horse, its Habits and Management. 12½ cents.
Boussingault's Organic Nature. 50 cents.
The American Poulterer's Companion; a practical Treatise on the Breeding, Rearing, Fattening, and General Management of the Various Species of Domestic Poultry, with Illustrations (fifty or sixty), and Portraits of Fowls taken from Life. By C. N. Bement. \$1.
Clater and Youatt's Cattle Doctor; containing the Causes, Symptoms, and Treatment of all the Diseases incident to Oxen, Sheep, and Swine. 50 cents.
Essays on Practical Agriculture, by Adam Beatty, of Ky. \$1.
Am. Turf Register and Stud Book. By P. N. Edgar. \$2.
American Herd Book, by L. F. Allen. \$3.00.
American Agriculture, by R. L. Allen. \$1.00.
Liebig's Agricultural and Animal Chemistry. 25 cts. each.
Liebig's Familiar Letters on Chemistry. 12½ cents each.
Loudon's Encyclopædia of Agriculture (English). \$10.
Loudon's Encyclopædia of Gardening. \$10.
" of Architecture. \$14.
Bridgeman's Fruit Cultivator's Manual. 63 cents

Bridgeman's Young Gardener's Assistant, new edition, much enlarged. \$2.
Bridgeman's Kitchen Gardener. 62 cents.
" Florist's Guide. 62 cents.
The Farmer's Mine. 75 cents.
The Vegetable Kingdom, or Hand Book of Plants. \$1.25.
Youatt on the Horse; a new edition. \$1.75.
Rural Economy. By Boussingault. \$1.80.
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Johnston's Catechism of Agricultural Chemistry and Geology. 25 cents.
The Complete Farmer and Rural Economist, by Thomas G. Fessenden. 75 cents.
The New American Orchardist, by Wm. Kenrick. 87½ cts.
The Honey Bee, its Natural History, &c., with 35 engravings. 31 cents.
Allen's American Herd Book. \$3.
Bees, Pigeons, Rabbits, and the Canary Bird, familiarly described. 37½ cents.
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A Treatise on Sheep. By A. Blacklock. 50 cents.
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Browne's Trees of America. \$5.
Gray's Botanical Text Books. \$1.50.
Gardner's Farmer's Dictionary. \$1.50.
Fruit Culturist, by J. J. Thomas. 62 cents.
Treatise on Milch Cows. 38 cents.
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First Lessons in Botany. 25 cents.
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Orders promptly attended to, for all kinds of Books in every department of Literature.
On hand, a complete assortment of School, Classical, Medical, and Miscellaneous Books, which he offers at wholesale and retail, at the lowest prices for cash.

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ON COMMISSION.

A. B. ALLEN & CO.,

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OFFER TO FARMERS, PLANTERS, GARDENERS, AND NURSERYMEN,

THE LARGEST AND MOST COMPLETE assortment of AGRICULTURAL IMPLEMENTS ever kept in the United States. It embraces the best implements now in use throughout the Country, together with those recently improved and invented; all of which are warranted to be made of select materials,—put together in the strongest manner—of a superior finish, and sold at the lowest cash prices.

Among these implements are upwards of FIFTY different kinds of Plows, manufactured by Ruggles, Nourse & Mason, of Worcester, Mass., also, for A. B. Allen & Co., in New York—for the South as well as for the North; Harrows of different patterns and sizes; Rollers of wood and cast iron on a new principle; Seed Sowers for all kinds of seeds, a recent invention; Cultivators, with different kinds of teeth; Horse powers of wood or of cast-iron, very strong and superior; Grain Threshers, with separators attached; Fanning Mills; Mills for grinding corn and other grain, a new invention; Corn Shellers for hand or horse power, the latter shelling 200 bushels of ears per hour; Vegetable cutters, will cut a bushel of roots for cattle in two minutes; Hay, Straw, and Corn stalk Cutters; Scythes, Rakes, Shovels, Spades, Hoes; Field and Garden tools of all kinds.

Fruit and Ornamental Trees and Shrubs.—Orders taken for these, and executed from a choice of the best Nurseries, Gardens, and Conservatories, in the United States.

Castings for the various kinds of Plows manufactured in Worcester, New York, and Peekskill.

Castings for the Sugar planters, and everything connected with Agriculture.

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Fertilizers.—Peruvian and African Guano, Lime, Plaster of Paris, Bonedust, &c.

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The American Agriculturist Almanac.—32 pages, with wood cuts.

Books on Agriculture, Horticulture, and Natural History.—A general assortment of all kinds.

A liberal discount made to dealers.

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GOLD WASHING MACHINES—LEAVENWORTH'S PATENT.

THE superiority of these machines over all others is, that the gold, platina, cinnabar (ore of quicksilver), and black sand (containing a large per centage of gold) cannot escape; and that the gravel and dirt pass off without detention. These machines will perform more and better work than any other ever constructed. They may be operated by hand, horse, water, or steam power. Price of hand machines \$25 to \$35 each; horse power, ditto, \$50 each. Additional castings, sieves, irons, and boxing, extra.

In addition to the above, emigrants to California will find at our warehouse, a large and complete assortment of the best and most recently constructed mining tools of all kinds, smelting and assaying apparatus, crucibles and retorts, with printed directions for using the same; pumps and hose; Whitney's celebrated rifles; wagons, carts, and wheelbarrows; agricultural implements, field and garden seeds, &c., &c., at the lowest prices.

The public are cautioned against purchasing gold machines, imitations of Mr. Leavenworth's patent, as he has directed his agent at San Francisco, E. Crosby, Esq., to enjoin all persons from using such, on their arrival in California.

A. B. ALLEN & CO.
189 & 191 Water st., New York.

MINER'S EQUILATERAL BEE HIVE.

THIS is the most beautiful and practically valuable hive ever before offered to the public. It only needs to be seen in all its parts, to convince any man of its merits over anything of the kind in existence. Price \$5, with an individual right, and full engravings of it, with ample directions in pamphlet form to make the same; together with the right, as above, for \$2 only. Monies remitted by mail at our risk. Sent to any part of the United States or Canada.

A. B. ALLEN, & CO., 189 & 191, Water st., N. Y.

SEEDLING POTATOES AND THEIR SEED.

N. S. SMITH'S improved Buffalo Seedling Potatoes, selected for planting purposes from his late crop of 1,400 bushels, sound and healthy, for sale. Also, Buffalo Pinks, Russets, Reds, Whites, Orange, Purple, and Early Junes, in equal proportions or otherwise, carefully packed in chaff and delivered at the wharf or depot. The late increase of the stock and a desire to make the benefits of the experiments available to all desiring such an improvement the price is reduced to \$2 per bushel or \$4 per barrel. These potatoes were again awarded the first premium at the late State Fair.

For sale, also, seed from the balls of the late crop combining all the approved varieties that have been obtained from abroad, as also those connected with the experiment in alternate culture for eight years past, prepared in the best manner, warranted to vegetate, and cannot fail producing splendid crops of many choice varieties of marketable size. They are put up in packets sufficient to produce about five bushels of tubers, and can be transmitted by mail, at single postage. Price, 25 cents per packet, with directions for cultivation. Furnished to seedsmen by the pound to a profit. All communications, post paid, will receive prompt attention. Transportation of the tubers safe from frosts after the first of March.

N. S. SMITH.

Buffalo, N. Y., Jan. 4th, 1849.

COMMERCIAL GARDEN AND NURSERY.

PARSONS & CO., at Flushing, near New York. The proprietors of this establishment invite public attention to their large assortment of every desirable variety of Fruit and Ornamental Tree or Shrub. Their importations of everything new in Europe are annually continued, and they offer a very large variety of Ornamental Trees and Shrubs imported expressly for arboreta and pleasure grounds. Their collection of Roses is annually enriched by novelties from abroad, many of which may be found described in their new work on the Rose, recently published. Fruit Trees receive their particular attention, and are propagated under their personal supervision; this care, with their possession of extensive specimen grounds, in which is tested every variety of fruit they cultivate, enables them confidently to guarantee the genuineness of the varieties.

Their care in pruning and cultivation enables them also to send out thrifty and well-formed trees. From their large scale of propagation, they can offer to dealers very liberal discounts, where hundreds or thousands are taken. Orders or inquiries can be addressed to the proprietors at Flushing, near New York, where catalogues will also be furnished. They have established a Branch at Brighton Depot near Boston and by the entire success of their trees transplanted thither have thoroughly proved the superior adaptation of Long-Island Trees to the soil and climate of any part of New England. This they attribute to the perfect maturity attained by the wood before frost, which renders the trees suitable for transportation to any latitude.

At the season of transplanting, a salesman will be at their Brighton Branch to furnish those who may prefer obtaining their supply thence.

WIRE FOR FENCES,

OF all sizes, bright or annealed, of the best quality, and at the lowest prices. For sale at the agricultural warehouse and seed store, by

A. B. ALLEN & CO., 189 & 191, Water st.

WM. R. PRINCE, & CO.,

SOLE Proprietors of the Linnæan Botanic Gardens and Nurseries, at Flushing, announce to their correspondents and to nurserymen in particular, that in addition to their vast stock occupying 70 acres, they have just imported 200,000 trees from Europe. They desire forthwith to receive the wholesale orders of nurserymen and others, to which immediate replies will be made with the lowest rates, so that all engagements may be perfected now and forwarded at the first opening of spring. A credit will be given, or an extra discount made for cash in whole or in part. Of the following, we have a very large stock:—

Pears on pear and quince stocks of all sizes from one to five years from the graft, of which above 12,000 are in a bearing state. Apples, Cherries, Plums, Peaches, Apricots, Nectarines, and Quinces of every description. The best foreign table grapes, and all the good American varieties, including several thousands of Black Hamburg, Golden Chasselas, Bar Sur Aube, White Sweetwater, Isabella, Catawba, Clinton, &c. Fastolf, Red and White Antwerp, Franconia, Large-fruited Monthly Raspberries. All the choicest Lancashire varieties of the Gooseberry. Red and White Provence, Cherry, Victoria Currants, &c. Strawberries, a collection surpassing all others in Europe or America. Leviathan, Victoria, Tobolsk, Duley's Giant, and other fine varieties of Rhubarb. Paradise Apple Stocks, and Pear Stocks, two years old. 300,000 Ornamental Trees and Shrubs, of all kinds and sizes. 100,000 Norway Spruce, Balsam Fir, White Spruce, Silver Pine, American and Chinese Arbor Vitæ, and other Evergreens. 3,000 Rhododendrons of the finest varieties two to four feet high. 60,000 Roses of all the finest Perpetual, Daily, Tea, Moss, and other classes at very low rates. Osage Orange, Buckthorn, Hawthorn, Evergreen Privet, and other hedge plants. Bulbous Flower Roots, the finest of every class. 200 select superb varieties of Dahlias, 400 varieties of Camellias, blooming size at low rates. Chinese Azaleas, 70 very splendid varieties, cheap Pæonies, Carnations, Chrysanthemums, Phloxes, Irises, and other beautiful herbaceous plants, very cheap. Scions for grafting of all the varieties of fruit. Cuttings of Ornamental Trees and Shrubs, &c. The only extensive collection of bearing specimen trees existing in this town is in this establishment, and the superior accuracy of the trees grafted therefrom is thereby insured. Every rose and strawberry premiums were awarded to this establishment by the Long-Island Horticultural Society.

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PERUVIAN GUANO

FOR Sale, at Bating Hollow, Long Island, by
Jy3t AZEL DOWNS.

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